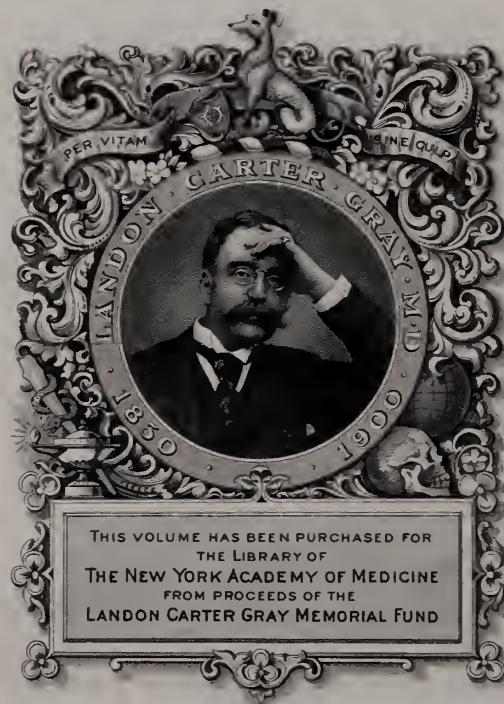
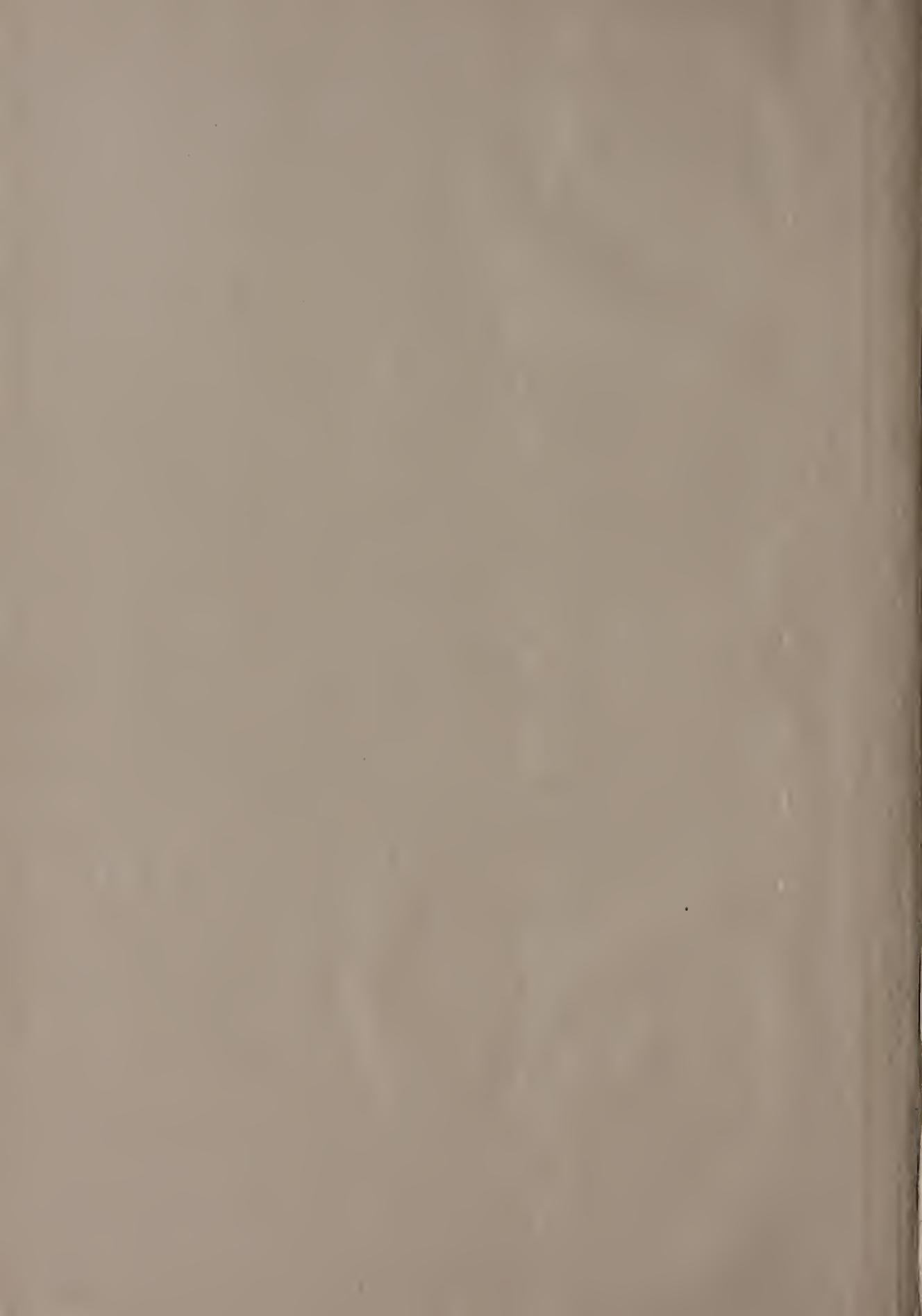


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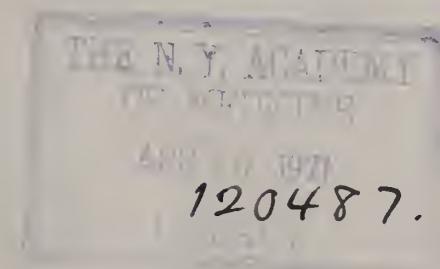
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Adrenalin in Medicine

2—Treatment of the Paroxysm of Asthma

THE fact that Adrenalin promptly relieves the paroxysm of bronchial asthma has been demonstrated in thousands of cases. Explanation of its mode of action, however, must be couched in the language of probability and speculation, because the pathogenesis of the disease is the subject of an ever-increasing number of theories and much controversy.

Among the more reasonable and credible of these theories are: 1, Anaphylactic manifestations in the bronchial mucosa from bacterial protein sensitization; 2, The same condition produced by sensitization to food proteins (allergy), pollens of plants and animal emanations; 3, Reflex vagus irritation of the bronchial mucosa from peripheral afferent impulses originating along the course of distribution of this nerve.

It is not unlikely that every case of bronchial asthma can be explained by one of these theories, and that, indeed, in some of the cases more than one of these factors are underlying. Regardless of the theory or theories applicable to any given case, the immediate mechanical cause of the distressing paroxysm is a sudden spasmodic stenosis of the bronchioles.

The action of Adrenalin

is to relieve this stenosis. Whether the dilator muscles of the straitened tubules are stimulated or the circular constrictor muscles are temporarily paralyzed by Adrenalin to bring about this change in the calibre of the bronchioles cannot be definitely stated. It is interesting to note in connection with the protein sensitization theory that anaphylactic phenomena elsewhere in the body are often favorably influenced by Adrenalin—especially in respect to the skin manifestation, urticaria.

Adrenalin is the best emergency remedy for the treatment of the asthmatic paroxysm at the command of the physician. Two to ten minims of Adrenalin (1:1000) are given subcutaneously, or preferably intramuscularly. Frequently only five or ten seconds elapse after the injection when partial alleviation of the dyspnoea is noticed. In a few minutes relief is complete. Adrenalin acts quickly or not at all. In those few cases in which no favorable effect becomes apparent after the first injection this medication should not be pushed. Some practitioners have noted that the injection of Pituitrin in combination with Adrenalin (equal parts) enhances and prolongs the action of the latter.



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ORIGINAL ARTICLES

ADVANCES IN THE SURGERY OF THE EXTREMITIES DURING THE WAR.*

By MURRAY S. DANFORTH, M. D.,
Providence, R. I.

Mr. President, Members of the Rhode Island Medical Society, and Guests:

The advances in Surgical treatment in general have been varied and marked during the past five years, during which many new problems have arisen, and old problems made important by the great number of patients involved. Even in the extremities the topics which could be taken up are numerous. In my paper I wish to consider chiefly those conditions and their methods of treatment with which I came in personal contact. Also I wish to consider the conditions in which the new methods and principles are applicable to civil practice. What has been learned from a study of a great many cases must be made use of now in the treatment of the individual patient in our work to-day.

Among the extremity injuries, fractures took a very urgent place and the methods used in the treatment of some of them I wish to discuss first. Of the fractures, those of the former hold perhaps first place. My first recollection of this fracture in Medical School years is of seeing a patient lying in bed with a weight at the foot of the bed for traction on the lower fragment, and with a long board splint and coaptation splints for maintaining the fragments in position. With that method a result in a simple fracture was rated as good when the shortening was not more than an inch, or even an inch and a half. This meant a limp and subsequent back strain and a not inconsiderable disability. From the early days of the war certain surgeons undertook an intensive study of the treatment of wounds of the thigh complicated by fracture. Sinclair

perhaps stands out as the surgeon who first made great progress in perfecting methods and developing a line of treatment which resulted in markedly better functional results.

His method was based on the use of the Thomas splint, practically unmodified, but with certain very helpful accessories, as the Sinclair skate. His traction was obtained by means of elevating the foot of the bed. Briefly, traction strips, as in the old Buck's extension, were applied to the sides of the extremity from the level of the fracture down to the ankle. The strips were either of moleskin or of gauze. If of gauze, they were fastened to the skin by special glue. The Thomas splint consists of a ring which fits around the thigh at the groin and is attached to uprights running from the ring down the sides of the leg to below the foot, where they are joined. After applying the traction strips the splint is put in place and the traction strips tied to the lower end of the splint. The leg is then supported in this splint by five inch wide strips of canton flannel, or other firm material, placed as slings running from one of the uprights of the splint under the leg to the other upright. The normal contour of the limb may be regained by varying the tension on these slings. The lower end of the splint was then fastened to the lower end of the bed and the lower end of the bed elevated. When thus adjusted the sliding upwards in bed of the patient from his own weight exerted a constant and very strong pull upward on the upper fragment. Sinclair had all his femur cases segregated, and then trained his medical assistants and his nurses to care for this particular type of injury. By these means it was possible to get efficient traction and efficient fixation for twenty-four hours out of every day. The results warranted the efforts which were made. It was my good fortune to see some of his work at Boulogne, watch the application of the splints and examine the patients undergoing treatment. He claimed to get nearly, or quite, full length in all cases treated at his hospital. The measurements that I was able to

* Read before the Rhode Island Medical Society, December 4, 1919.

make, and the study of the X-rays of his patients, perhaps did not fully warrant the assumption of complete restoration of length, but practically every case did show less than one half inch of shortening, and in many instances the fractured leg was as long, and sometimes slightly longer, than the uninjured one. To gain more extension, and to maintain the traction at the times that the traction strips were being changed, he devised a skate which was practically a piece of wood a little longer than the foot and slightly wider. This was fastened onto the sole of the foot by means of strips of flannel fastened to the splint and glued to the sides and dorsum of the foot. The skate was then fastened to the lower end of the splint and was simply an additional traction on the lower fragment. Sinclair's method was of very great use and showed a great improvement in results as compared with those obtained by previous methods. A disadvantage was that in some of the cases in which there was much suppuration in the thigh, gravity due to the bed elevation tended to cause the pus to extend up the thigh.

Pearson at Edmonton, England, at one of the American hospitals, developed another method. In this also the Thomas splint was the foundation of the principle and the splint was attached to the lower end of the bed as in Sinclair's work. Instead, however, of attaching the lower ends of the traction strips to the lower end of the splint they were attached to a cord running over a pulley at the foot of the bed and thence to a heavy weight. In this case the fixed point for counter pressure was the tuber ischii, against which the ring of the splint rested. Thus the lower fragment was pulled downward while the upper fragment was held fixed by the pelvis. To keep the ring in position and prevent its riding upward over the ischial tuberosity, a cord ran from the ring of the splint up to a pulley on a frame over the bed and then to another pulley at the head of the bed and from there to a weight. In many of the cases, instead of using traction strips applied to the sides of the limb, so-called ice tongs were used. The instrument is actually like a pair of ice tongs, the points being inserted into the sides of the femur at the suprakondylar ridges. This so-called skeletal traction is undoubtedly more effective in gaining length and controlling the lower fragment. The

application is very simple, being done under local anaesthesia, and is probably less painful than the continuous pull on the skin such as occurs in using a Buck's extension.

In the treatment of between one hundred and fifty and two hundred cases of femur fractures that I supervised at one of the Base Hospitals at Savenay, I had the opportunity of trying out on a large number of cases (large number from a civil point of view) the two methods of traction, the one with the bed elevation and the one with weight and pulley as a means of traction. The bed elevation method is more easily carried out and requires less constant supervision, but when the other method is well carried out I believe there is no material difference in the results obtained. My deductions are drawn from results which were obtained on fractures which were beginning to unite or were united in mal-position, either as regards angulation or unnecessary shortening, and required refracture. Measurements and X-rays showed a gain of from one half to three quarters of the original shortening. Many cases showing two inches of shortening before traction showed only one quarter to one half inch after treatment.

Details of treatment such as massage about the knee, early movement of the knee, refraining from weight bearing until firm union is present and then only with a walking caliper, can only be mentioned by name. The bed-side X-ray unit must be given much credit for what has been accomplished in improving our knowledge of the essentials of treatment.

The same principles of traction and slinging the leg in combined fractures of the tibia and fibula are employed, but the old results were good as a rule and not as much chance for improvement was present for that reason.

Similar methods of traction were found applicable for fracture of the humerus and proved very effective and satisfactory.

In the study of large numbers of fractures certain deformities and disabilities were found to occur. Knowledge of these will help in the individual case. In the upper extremity fractures near the head of the humerus are likely to result in limited abduction. Therefore, treat this fracture with the arm abducted. Fractures of the radius above the wrist are likely to result in limited supination; therefore, treat this frac-

ture with the forearm supinated. Multiple carpal fractures result in limited dorsi-flexion of the wrist; therefore, treat with the wrist dorsi-flexed. Leg fractures (tibia and fibula combined), if treated in a Thomas splint almost always result in an internal rotation of the lower fragment. Therefore, treat with this point in mind. Pott's fractures and fractures of the tarsus frequently result in limited dorsi-flexion of the foot. I think one of the surprising things to me was how disabling a simple Pott's fracture could prove, and the chief disability was the limited dorsi-flexion.

The discussion of positions for treatment to prevent limited movement in joints capable of motion leads to the question of position of choice for ankylosis in cases where movement will be lost. Gunshot wounds involving joints with or without comminuted fractures of one or more of the bones very frequently resulted in ankylosis with consequent disability from loss of the usual movements. It was learned however that in almost all joints a position could be found that would minimize the loss of function and it seems to me worth while to take up some of the more important joints and specify the positions that much study and trial proved of the greatest utility. An opportunity for learning the best positions could only come in a study comprising a great number of cases such as have been presented by the war casualties. A realization that certain wounds are likely to cause ankylosis, and treatment with the knowledge in mind that certain positions make the best limbs for function will do much to shorten the period before a patient's occupation can be resumed.

THE SHOULDER JOINT: Ankylosis with the arm abducted about 70° , brought forward so that the elbow is about in the plane of the front of the chest and externally rotated so that when the elbow is flexed to a right angle the wrist will be one or two inches above the level of the elbow, will give an excellently functioning arm. The movement of the scapula will permit of most surprising use of the extremity for almost all forms of work and gives a very strong useful arm.

THE ELBOW: The position of choice depends upon the occupation of the individual, but it is usually an angle of about 100° . For a farmer it may be 110° ; for a man doing clerical

work it may be 90° ; for a machinist about 100° . The position also depends somewhat upon which arm is involved.

THE FOREARM: Ankylosis in a position midway between supination and pronation for the left forearm, and a little pronated from mid position for the right forearm, proved after many trials the most desirable. Here again occupation is a factor in making the decision.

THE WRIST: Ankylosis should always be with the hand moderately dorsi-flexed. In stiffened hands, frequently restoration of use was found to hinge upon getting first a dorsi-flexed position at the wrist. This seemed not to have been recognized previously, nor in fact during the first years of treating battle casualties.

THE HIPS: Many factors are important in determining the position of choice. The amount of shortening helps to determine the amount of abduction. The occupation helps to determine the amount of flexion. In our experience it is desirable to abduct the hip just enough to make the affected leg apparently a little shorter than the sound one, when the two are lying parallel. Too much abduction causes walking to be very difficult, and standing very fatiguing, on account of the resultant back strain. Fixation with about 35° to 40° of flexion at the hip instead of in a straight position makes sitting much easier and in standing such a patient shows only a very slightly exaggerated lumbar lordosis. In patients whose occupation requires chiefly sitting even 40° to 45° is probably desirable.

THE KNEE: The same two factors as for the hip are of importance in this decision,—the amount of shortening of the leg already present and the occupation of the patient. If there is no shortening, or only a very small amount, 20° to 30° of flexion makes a limb that is almost as satisfactory for standing as a straight one and much less in the way in sitting. Twenty degrees of flexion makes walking rather easier than with a straight leg. For a sedentary occupation, 35° of flexion is very desirable. On the other hand, when there is already considerable shortening any added shortening due to flexion is to be avoided.

THE ANKLE: In this the desirable position is not as a rule difficult to decide. Unless there is shortening of the leg, a right angle position, or possibly 5° below a right angle, makes the

most satisfactory walking foot. If the tibioastragalar joint is fixed at this angle use and treatment will so increase the flexibility of the mid tarsal joints as to largely compensate for the loss of movement in the ankle joint proper. Great care must be taken though to avoid any varus or valgus in the relation of the os calcis and astrogalus to the tibia, otherwise the balancing of the foot will be poor and both standing and walking difficult.

Another complication in the treatment of wounds of the extremities with bone injury is osteomyelitis. A great amount of study and experiment have been carried out in endeavors to cure this condition. Months after most of the battle wounds have healed one finds suppurating wounds persisting, due to bone infection. Early in the war Carrel of France and the Rockefeller Institute and Dakin, an English chemist, worked out a disinfecting solution for use in cleansing wounds. Dakin evolved the solution and Carrel the technique. Many modifications of the solution and many new disinfecting solutions have been tried and many changes in the technique of treating the wounds attempted, but it seems to me from what I have seen that the so-called Carrel-Dakin solution used mainly according to the technique worked out under Carrel has proved the most satisfactory. The operative part of the treatment found most efficacious does not represent a great advance over that carried out for several years previous to the war by some of our best surgeons interested in the problem. That comprised a most thorough removal of all infected areas, both in the bone and soft parts, combined with great care to avoid spreading the infection to the adjoining healthy tissue. It amounted practically to going clear of the infected area, somewhat as one goes clear of the affected area in removing new growths. In spite of the most careful technique not all the infected tissues could be eradicated, and recrudescences were common. Some method to complete the disinfection was needed. The Dakin solution as used in cleansing soft part wounds certainly, at least in part, fulfilled the requirements. It is not a "cure-all" and is effective only when all details are scrupulously watched. In osteomyelitis due to gunshot wounds a careful dissection of all macroscopically affected soft parts and bone, fol-

lowed by treatment with Dakin solution with correct technique, frequently resulted in a short time in producing "sterile" wounds. Then at a secondary operation closure could be made. For filling the cavities in the bones when necessary at the secondary closure, muscle proved the best tissue where it could be used without injuring the function of the extremity. In other instances, a large flap of fat with a broad pedicle could be turned down into the cavity. Fatty tissue however does not resist infection as well as muscle and is second choice. Nevertheless, in a number of instances of deep cavities about the sacro-iliac joint, following removal of affected bone and sterilization with Dakin solution a wide flap was turned down into the wound with success.

Osteomyelitis of civil life unless incident to compound fractures, it seems to me, is a somewhat more difficult problem. Here we have a bone infection resulting from bacteria which are already present in the patient's system. From the anatomical peculiarities of the arterial system the bacteria find lodgment in the bones and the lack of resistance of the individual permits their growth and consequent necrosis of the bone. A very extensive involvement frequently follows, and also metastasis to other bones, or, possibly due to lessened resistance, new bones are infected from the original source. In any event, the infection in the given bone is more frequently wide spread, making eradication difficult and the lowered general resistance makes absolutely complete sterilization harder, but at the same time more necessary, if a cure is to be obtained. I do believe, though, that application of the methods developed during the care of osteomyelitis from gunshot wounds will enable us to more efficiently treat the osteomyelitis that we see in civil practice.

The presence of infection resulted in many instances in non-union of fractures, so that much of value has been contributed to our knowledge of treating this condition. Experience early showed the necessity of waiting for a considerable time after healing before any operative attempts could be made to obtain union. From two to six months were found necessary, and even then a recrudescence of the infection might result. Some help as to the probable necessary length of time of waiting could be obtained from

the character of the scar and the duration of the previous suppuration. If a bone graft was to be used, it was the custom of many surgeons to do a primary operation at which as much of the scar tissue as might be was excised, also a bit resected from the ends of the fragments, or even grooves made if the plan was to use inlay grafts. When this procedure was used, if a recrudescence occurred, it was not as serious and long continued as if no graft was in place to act as a foreign body, and the patient did not have the added operative area on the shin. On the other hand, if no recrudescence occurred, the graft could be removed from the tibia and placed in position at a secondary operation with much greater certainty of a successful result.

In my experience, inlay grafts from the tibia were the most satisfactory. Some intramedullary grafts do hold the fragments in good position but do not, I believe, result as often in union as is the case of well implanted inlay grafts. The need of extending the graft into freely bleeding bone in both fragments should be emphasized. If you hold to the theory that the graft acts only as a bridge, the eburnated bone at the ends of the fragments does not produce new bone to grow across the bridge. If you hold that the graft lives and grows, then also it must be necessary for it to come in contact with normal bone to which it can unite and from which it can get some of its nourishment. The value of autogenous bone grafting has never been more apparent than now. It will give union in cases of long continued non-union of the long bones. It will give union and restore length in cases of loss of substance in the radius or ulna, or in the tibia. A graft can restore loss of substance in the tibia where as much as one half of the shaft is absent. A graft will act as an internal splint in fractures, where even at open operation the fragments cannot be held in good opposition by themselves. However, except in a few instances of oblique fractures, grafts should not be required as splints.

When we consider a graft in its use as a splint, the question of a graft made from boiled beef bone must be taken up. In such a case we wish only a splint and it is not required that the substance should be one that will become a living bridge of bone. In this condition the ends of the fragment will unite of themselves once they are

held in good apposition. For this a section of the desired shape cut from a beef bone and boiled may be inserted. It need not be very large, and is not as likely to act as a foreign body, as is the case if a metal plate is used with screws to hold it in place. I do not believe, however, that it is desirable to insert such a beef bone graft as an intramedullary splint, but rather as an inlay graft.

Metal plates were used to a considerable extent, but I think their questionable desirability is shown by the experience of many who found it necessary to remove such plates, either because they acted to hold the fragments apart and thus prevented union, or as foreign bodies keeping up suppuration. In a number of cases in my comparatively small series, I had to remove metal plates which were acting as foreign bodies in keeping up suppuration. This in itself is not a serious indictment, for infected bone grafts do the same, but also I removed a number of plates which were definitely holding the fragments apart and absolutely preventing union. I cannot but believe that the role of the metal bone plate is a very small one.

Leaving the field of bone and joint injuries, one may enter that of nerve injuries and the resultant complications. Previous to 1914 few men had seen a dozen cases of direct nerve injury, and fewer surgeons had operated upon as many. Battle wounds produced hundreds and even thousands of such injuries, varying in degree from a slight contusion causing temporary paralysis, to a complete division causing permanent loss of function. In various orthopaedic centers in Great Britain an intensive study of these conditions was begun in an attempt to differentiate those in which there was division from those in which there was only contusion or crushing from which a spontaneous recovery might be expected. Finally certain examinations and tests were found which gave much of the information needed. Outlining the changes in cutaneous sensibility and determining the responses of the muscles to faradic and galvanic stimulation had been done for many years to determine the condition of the nerves controlling the affected area, but almost more information was obtained from testing the voluntary power in the individual muscles and this was rather a new attempt. Great care was re-

quired to do this accurately. It is undoubtedly more difficult to learn than it is to learn the electrical testing, but the information gained was of more value. Voluntary power may be present where there is no response to a faradic current as ordinarily used, and when voluntary power is present there must be both anatomical and physiological nerve continuity. In the absence of any evidence of physiological continuity as determined by the cutaneous sensibility tests, electrical tests and voluntary power tests, Tinel's sign might still give almost indisputable evidence that there were at least a few fibres passing through the lesion.

The probable condition of the nerve having been determined, the next step was to decide upon the treatment. Here again the study of the great numbers of patients enabled one to make deductions which had never been possible before. In cases where there was found at the first examination evidence of entire loss of physiological continuity, it was not safe to assume there would be no return unless a very long interval had elapsed since the healing of the wound. Practice varied as to the length of time it was thought justifiable to wait before exploration. At the center where I was, two months were allowed. Then, if all the tests showed no change, exploration was done. In some places the waiting time was one month, in others from four to six months. We found, however, that if two months showed absolutely no change, change seldom came later, and we felt valuable time was lost by waiting longer. The conditions found at operation, I may say, were almost invariably worse than the previous examinations suggested.

End to end, suture proved to be the only method of repairing a complete division that promised much for a result. Side anastomoses promise little. Grafts to restore loss of substance may be of some value, but not sufficient time has elapsed to know the results in any large series of cases. We have learned, however, that with a carefully done end to end suture, the sutures being placed only in the sheath, the nerve is reasonably certain to show regeneration. I had the satisfaction of seeing this proved in a considerable number of cases of my own, and also in a larger number done by Sir Harold Stiles

and Major W. I. Baldwin at the Edinburgh War Hospital.

Peripheral nerve surgery can never play an important part in civil surgery, for direct nerve injuries requiring operative intervention are very few in civil life, but certain associated conditions may occur which are not unlike those found in the paralysis due to anterior poliomyelitis, and justify our studying the technique and result of tendon transplantation and tendon fixations. One of the most pleasing tendon transplantations was that for wrist drop, due to irreparable damage to the musculo-spiral nerve. For years various transplantations have been done for this condition, for it does occur occasionally in civil practice. In war work it was found that while certain substitutions of flexor tendons would supply some of the lost movements, the problem was not only one of substituting tendons, but was one of balancing the various movements. The flexor carpi radialis may act very satisfactorily in extending the fingers when grafted onto the extensor communis digitorum, but to make the hand a useful one for work the wrist must be under control and well balanced. After many attempts and much study of the actual actions of the muscles, both singly and in groups, the following was found to be perhaps the most satisfactory transplantation:

The flexor carpi radialis into the extensor ossis metacarpi pollicis and the extensor brevis pollicis, the palmaris longus into the extensor longus pollicis, the flexor carpi ulnaris into the extensor minimi digiti, extensor communis digitorum and the extensor indicis. This gave good function for the fingers and thumb.

The pronator radii teres was transplanted into the extensors carpi radialis longior and brevior. The work done for this condition and a careful comparison of results gave us much information of value regarding the technique of the operation and also of the absolute necessity of as complete an understanding as possible of the various factors included in the balance of an extremity.

Not as much that was new was found in transplantation in the foot, but in complete permanent paralysis of the muscles supplied by the external popliteal nerve some very satisfactory tendon fixations were done. These had been done in children before. The tibialis anticus tendon was

divided about six inches above the ankle joint and the upper end of the lower portion passed from within outwards through a tunnel made in the tibia four inches above the ankle joint. The peroneal tendons were divided at the same level as the anticus tendon and passed through the same tunnel from without inwards, the opposite tendons then being sutured to each other and covered over periosteum lifted up from the tibia. The best position for holding the foot at the first dressing after operation was to have it neutral as regards varus and valgus, or in very slight valgus, and as regards flexion or extension at the ankle, to have it a little above a right angle. The tendon will stretch a little and the final result should be a right angle or few degrees below. This gave a good walking or standing foot for which no brace was required, and freedom from apparatus is a great asset.

Each individual patient is a study in himself and no generalizations can be made as to proper treatment in the special case where one or more muscles are paralyzed. Often a tendon transplantation can be done to substitute for the individual muscle, but always the final balance of the foot must be visualized if hope of good function is to be fulfilled.

One other development which from the satisfaction it gave to both surgeon and patient I wish to mention is that in the treatment of stiffened hand joints. Many times the joints were so badly involved that they seemed almost hopeless. In many instances injuries to the forearm and hand were so complicated by the consequent stiffening of the fingers that even after the primary wound was entirely healed the function of the hand was not much improved. At the beginning hot soaks, massage and exercises were tried with success in a few cases. Then for a while manipulations were used, only to find that frequently the joints were stiffer than before. Next, elastic traction was used, the traction being applied in direction to correct the deformity. This resulted in improvement in a certain number of cases and never made the condition worse. Finally, elastic traction was used, the traction being applied in the line of the deformity. Various splints were devised for this treatment, but the principle of each was the same—a splint on the forearm extending into

the palm as a cock-up to hold the wrist dorsiflexed, and to this a racquet shaped extension was attached. Adhesive plaster strips were applied to the sides of the fingers and from these, elastic bands extended to the racquet. In this way strong traction could be exerted, first to stretch the joint capsules without any attempt to flex the fingers, and only as the capsules became more flexible was any attempt made to gain flexion. The technique is much like that used in treating early tuberculous hips with deformity. To me it was one of the most satisfactory bits of progress made in healing war injuries, and I believe has its use in industrial surgery.

In all our work with bones, joints, nerves and muscles, function is the end sought, and credit must be given to the factors that after the surgeon had done his work took up the task of restoring that function. In all the centers where the treatment of extremity injuries was carried out, the department of physiotherapy played an important part. It was interesting to find that gradually the simpler methods came to be those in which the most reliance was placed. Joints became mobilized, not by forcible manipulation, except in a comparatively few instances, but by stimulating measures, as hot and cold showers, hot whirlpool baths, hot air baking, followed by the most painstaking massage and passive and active movements. The value of active exercise became more and more appreciated, and was exemplified in the so-called curative workshops. In these shops an effort was made to choose an interesting occupation which would cause movement for the affected joints and development for the affected groups of muscles. The value and even necessity of occupation for the mind which these shops furnished was shown by the improved morale of the men. Great credit is due to Sir Robert Jones, who did so much to develop and foster the plans for these shops, and even more credit is due to him for the tremendous inspiration he gave to all surgeons overseas for better and better work.

It is not an easy task to cover in an adequate fashion the advances that five years of intense activity have made in this branch of surgery, and my fashion has been far from adequate, but

I hope I may have brought out some of the methods by which we may treat fractures of the femur more satisfactorily and other fractures with more certainty of good results. A knowledge of the deformities and limitations of movement that often follow the various fractures is the best means of prevention and that could only come from seeing a great many fractures and observing the outcome of various methods. Positions of choice for ankyloses can only be determined by trial, but once worked out, our present patients may have the advantage gained. For osteomyelitis of civil practice, the points learned in war experience are not of marked importance perhaps, except in their showing the value of the most painstaking care in the operative and subsequent treatment. The importance and the role of bone grafts has been emphasized and cases that will be benefited will be chosen with more certainty. Nerve surgery has taught us much in itself, and also from its relation to other disabilities. The surgery of tendon transplantation and fixation is on a more definite foundation and can be approached with a better conception of what it promises than ever before. Stiffened joints of the hands are a little less of a problem in industrial cases than before; and, lastly, the importance of the after-care in extremity surgery was never more realized than now. A correctly set fracture, or a well sutured nerve, or a properly done tendon transplantation or fixation means not much if the after-treatment is not well directed.

DISCUSSION OF DR. DANFORTH'S PAPER.

DR. ROBERT B. OSGOOD, Boston, Mass.—I feel it an honor to be asked to come down and discuss Major Danforth's paper. It is more interesting to have an outsider disagree with the paper, but I am not able to do that in this case.

I had the good fortune in the war to see Major Danforth do this work, and it so happened that I was made to sit in a wheel chair most of the time, so that he is far better able than I to discuss the question.

His talk to you about fractures of the femur and the advances in treating the femur were really instructive. The mortality of these cases was usually eighty-three per cent. Finally the

treatment and proper care—the methods which Major Danforth has described to you—became famous, and the mortality dropped down to fifteen per cent. He talked to you about Pott's fracture. There is one thing more that he did not say about Pott's fracture, and I think he will agree with me. It is the tremendous disabling quality of Pott's fracture. One fact that I have realized is that in Pott's fracture you not only have a bone lesion of the malleolus, but you also have strain, and the fracture is quite serious, especially when there is deformity or backward displacement of the foot. This is a very disabling joint fracture, and you notice that patients have almost no inward and outward movement at the ankle. You find that you cannot move the position of the fracture and all the patients complain of a very serious pain when they walk and step, due to injury of the os calcis around the astragalo-calcaneal joint, and just a tiny bit of motion in the foot is felt in the joint.

One word in regard to the bone graft in the forearm. Many bone grafts in the forearm do take, but a splint graft often does not take in the forearm. Practically after four or five months the grafts may show non-union. In the French army in Paris, in place of the bone graft in the forearm they used instead the transplantation of a layer of periosteum one-eighth inch thick (after the method of Professor Chutro), laid over the fracture, after making a bed for it in a section of thin tissue.

One other bone, I think, needs investigation. In transplanting a tendon into the tibia, the tendon may stretch and the foot will drop down again. If you leave a long strip to the tendon it will often stretch. Bury the tendon that you transplant nearly its whole extent in a tunnel in the bone, or at least under the periosteum so that there is not a long strip of free tendon.

Concerning the advance in treatment of stiff fingers, Major Baldwin has worked out a treatment of stiff fingers by traction on the fingers in the direction of the deformity, and the results are very wonderful. If the patient's fingers were stiff and absolutely crippled, he was able to work out extremely useful hands. It is quite remarkable and extremely satisfactory.

I found by chance that a doctor in New York published in 1910 or 1911 a paper on compound fractures in civil life. An operation was per-

formed on the femur and all devitalized tissue was removed. The wound was then sewed up tight. It remained for a little man in France, who was an important French surgeon, to work out the principles of healing thousands of wounds. He worked them quite well in that French hospital, and became convinced that if you get rid of a lot of destroyed tissue and dissect away not simply the good tissue but the devitalized tissue, that good results will be obtained.

Out of ninety per cent of wounds received, eighty per cent were gun shot wounds. The technical work was carried on in the first station, but the wound was not sutured at that time but left open three or four days. It is a shame to admit that, as we have been for years studying the treatment of septic joint wounds. Simple treatment was to keep it sloughing. If you did do an operation on it, it was proved definitely that in a septic joint wound you never want to put drains in the joint, but encourage the man to move the knee himself and thus squeeze all pus out of the joint. The man must be made to move the joint himself. I have seen men working about with open wounds and pus oozing out. Treatment of the joint wounds has taught us that motion is an important method of treatment. After the joint with infection has been washed out thoroughly, and foreign bodies removed, it is almost always safe to close the wound up tight. One other point which I wish to speak of is the question of early treatment of bone casualties. Through the foresight of our chief surgeon we were allowed to be put in control of early bone and joint injuries. Our permanent division surgeon had the corps trained to apply the seven transpart splints of the American Army. Our surgery was good but it did not compare with the best surgery of the French and English. But when I tell you that it is fair to say that not more than five or six per cent of our cases came back so you can certainly see that it was a very great gain over the earlier surgery.

DR. ROLAND HAMMOND, Providence, R. I.—The title of this paper has been very well chosen. The war is already such a matter of history that we must consider the medical and surgical knowledge gained during these five years solely from the point of view of its application to civil injuries and diseases. This relationship has

been very well brought out in the paper read and in Dr. Osgood's excellent discussion.

I spent three very instructive months last spring in visiting the various orthopedic centers in the British Isles. From a study of all the various types of injury seen in these hospitals, and from conversation with the surgeons at these institutions, I came to practically the same conclusions which Dr. Danforth has reached with regard to the value of certain procedures. I believe that we must proceed cautiously in taking over into civil practice many of the lessons learned in treating war injuries. These patients were the victims of particularly severe and disabling accidents, the like of which is rarely seen in civil practice, even in the coal mines and steel mills of the Middle West. The treatment of these conditions was developed out of a peculiar need and much of the knowledge gained will soon be forgotten until the next war obliges us to relearn it. This statement applies particularly to conditions like nerve injuries.

I should like to emphasize certain points in the paper. There has been a distinct advance in the handling of certain fractures, especially those of the femur. It must be remembered, however, that these fractures were nearly all compound; that the muscles were shot away and their tone destroyed. The closed fracture of civil practice presents a different problem. The muscle pull is much harder to overcome than in a compound fracture. Here, I believe, is a field for skeletal traction. The chief advantages are that the leg is brought down to length. Knee motion is quickly restored, because the knee is moved daily and because the joint ligaments are not stretched as in other methods of traction. Mild suppuration of the skin, never involving the joint, and lasting forty-eight hours, is reported in 25 per cent of the cases. It is not necessary to put all cases of upper arm fracture to bed and apply traction in abduction. Many such cases are better treated as ambulatory cases. Each fracture presents its own individual problem for solution.

The treatment of osteomyelitis has shown some great advances, but it is questionable if the methods applied to civil cases will give as favorable results, for reasons which the reader mentioned. The Carrel-Dakin method, while a remarkable advance in wound sterilization, must

be simplified before it can give universally good results in widely diversified clinics. The careful preparation of the bone cavity with elimination of pockets is the material advance in the surgery of this disease.

Bone plating has nearly had its death knell in this war, and I trust the obsequies will soon be pronounced. The inlay bone graft has proved its worth on too many occasions to doubt its real value. Intramedullary bone splints are unphysiological, and result more often in non-union.

In the treatment of stiff joints, I should like to point out that the experience in this war has confirmed the experience of orthopedic surgeons for many years, that the forcible manipulation of these joints is productive of much more harm than good. Manipulations should be gentle and the gain of motion gradual, covering a period of weeks rather than minutes.

DR. FRANK E. PECKHAM, Providence, R. I.—There are many things in civil practice, of course, that differ from military conditions. The treatment of the upper end of the humerus for instance. It has been found that simple fractures of the upper end of the humerus can be treated with the arm at the side and not in abduction. It has also been demonstrated with X-ray pictures that fractures of the femur, in the upper, middle and lower thirds, can be treated without ether or plaster and without very much discomfort to the patient. I feel that Dr. Hammond's note of caution should be heeded. There is one thing, though, in which this lesson for reconstruction really should be taken to heart by the medical profession. In the Rhode Island Medical Society there are men of ability, power and brains, who do not get in contact with the large problems of industrial surgery. If all their skill and ability could be put to work, it might show how much good can be done in industrial accidents. If a movement by the general profession and your representative men of skill and success could be met by a similar movement from representative men of commercial standing, it would influence men to demand more efficient treatment of the injuries in industrial accidents. In some of the large plants, as you know, if a man has a fracture of the left wrist, he has a place waiting for him when he is ready to go back to work. If he has a fracture of the

wrist he need not loaf until it is well and then go back to his old job. It seems to me that if the lesson for reconstruction will but turn in the industrial direction, very much good will be done.

CHILD WELFARE—YESTERDAY AND TO-DAY.*

By ELIZABETH M. GARDINER, M. D.,
Providence, R. I.

The general child welfare problem, as we all know it, is but one phase of a program of public health work, and if not the most important at this time, then certainly it is the most promising of results of all field of endeavor in the realm of preventive medicine. As a subdivision of social welfare, we see linked up with it, either contributing toward, or set in opposition to it, every health, social and economic factor of our present civilization—to guarantee the general welfare of children, one must indeed delve deeply into human experience, its failures and achievements; consider with no little output of judicial sense every section of that mosaic which we call environment; indeed we must go further and throw the searchlight of science and knowledge into that period, the pre-natal state, considering the unborn as well as the born.

The conservation of child life is only now properly gripping the minds as well as the hearts of thinking people. Of course, the child in need of special care has for a long time been the object of much study and effort on the part of far-seeing individuals and organizations, and while the work on behalf of the child in industry might be said to have initiated child welfare work, this type of child—the dependent, neglected, defective child, in its very appeal of helplessness and lack of promise, has been the inspiration of the whole child welfare movement as we know it to-day.

Ten years ago, in 1909, there took place in Washington, an event of deepest significance to all children; it was described as a conference on child welfare, and was later referred to as the "White House Conference," to which were brought at the invitation of President Theodore Roosevelt, men and women from every state in the union, who were actively engaged in the

* Read before the Providence Medical Association, November 3, 1919.

care of the dependent child. Eleven of the set of thirteen conclusions arrived at by the conference dealt with some phase of the care and disposition of the *dependent child*. In the twelfth and thirteenth of these conclusions we see evidences of the realization on the part of these workers for children that a task of great breadth and depth lay before them. In the twelfth conclusion, they voice their approval, as a body, of the establishment of a Federal Bureau, which should be called the Children's Bureau, whose duties would be somewhat as follows—"to investigate upon *all* matters pertaining to the welfare of children and child life, to especially investigate the questions of infant mortality, the birth rate, physical degeneracy, orphanage, juvenile delinquency and juvenile courts, desertion and illegitimacy, dangerous occupations, accidents and diseases of children of the working classes, employment, legislation affecting children in the several states and territories, and such other facts as might have a bearing upon the health, efficiency, character and training of children." The thirteenth conclusion advised the sending of a special message to Congress, with the idea of hastening the establishment of such a bureau.

At first glance this would seem like a very sudden and wide outgrowth from the interests of the dependent child, its care and custody; but one may readily imagine that in the interchange of ideas and experiences which took place at this great conference the number and variety of problems discussed and dealt with made it more and more evident that in dealing with any phase of child welfare all the factors concerning all children come into play. If it were possible to lessen existing evils, the preventable ones had to be eliminated, and if there was to be any value and the greatest value to prevention, it must be started at the very beginning.

That the Children's Federal Bureau was established and has since magnificently justified its existence goes without saying; that the bureau has gone deeply into the study of the casual factors regarding infant and maternal mortality and child wastage of all types is shown by the character and number of publications issued by them since its establishment. Its activities in the way of propaganda are well and favorably

known, and yet we are conscious within the last two or three years that the child and all matters concerned with its well-being are brought more and more sharply to the foreground of public attention. Not only are social workers, physicians and educators deeply immersed in its study, but in all parts of this broad land the lay-people are intensely interested. Magazines and periodicals devote whole sections to the child in every issue; parents are watching their children more closely, demanding health information for themselves and health supervision for their children while at school; industrial interests are finding it expedient to protect the expectant mother, restricting her hours of labor and preventing her working in factory and shop during the latter months of pregnancy, in order to better insure safely born children; insurance companies find that it is money well spent to endow typical industrial localities with the necessary funds to carry on demonstration health-conservation activities, in which child saving work takes a prominent part.

The whole world is beginning to bestir itself, to shake off, one by one, the shackles of fatalism and old-time superstitions that have hampered and delayed things for so long: It is setting aside the theory that the weakling is a necessary refuse of each age's progress, and why waste time, money and energy on its short span of life? It now believes and knows that it is better and safer to prevent its short and useless existence by prevention of marriage between the unfit: (We have only to scan the marriage laws of our own Rhode Island to see how little protection the unborn is afforded against being born a defective, mentally and physically).

In the spring of this year we find another child welfare conference being held in Washington, and to make it a proper and fitting anniversary of that famous "White House Conference," it was international in character. Other meetings, regional in distribution, were subsequently arranged. The conferences were held in the largest cities of the United States; representatives from England, France, Belgium, Italy, Serbia and Canada all came to pool their experiences in child care during the war period, so that we might benefit by them and that cer-

tain irreducible minimum standards for the welfare, of children, applicable to all countries might be worked out. With that end in view, the preliminary conference in Washington divided into three sections:

1. Child labor and education.
2. Public protection of the health of mothers and children.
3. Children in need of special care.

These standards have since been issued and are available, upon request to the Children's Bureau. It takes but a brief glance at these standards to impress one with their completeness, the great growth of sympathetic as well as scientific understanding of the complex problems involved. One is struck, too, with the great part that health protection has taken in their framing. This is particularly evident in that section concerned with the public protection of health of mothers and children. These standards would establish maternity centers and hospitals, public nursing, control of midwives, trained household attendants to care, under supervision, for the patient and the home during confinement, the provision of economic relief where necessary, and, of course, an educational health program for parents and for the general public. An extensive code is set forth in these standards by the application of which lives of hundreds of thousands of children might be salvaged.

It used to be said that once a child is born, the parents and the state must accept the responsibility for its well-being. We now go a step further. The very fact that state after state in this country is creating new departments for child welfare activities is evidence enough that the state recognizes its obligation to afford to every mother the necessary education and health facilities to insure a safely born child.

It is natural when considering all these advances to inquire as to the why and wherefore of this growing sense of responsibility, this intensive study on the part of governments and statesmen. It is, of course, a natural by-product of a great and disastrous war. As one writer expresses it, "In that complacent period previous to 1914 it seemed possible for statesmen to ignore the existence of children; what happened to millions of young people was of little interest to governments, and it is perhaps

safe to say that before the great war no cabinet meeting of any great Power had at any time devoted its full attention to the national problems raised by the very existence of children. To be sure, states and cities planned more or less for the welfare of children, but statesmen had no interest in them—there was no such thing as national responsibility for children." "Now, it is common knowledge among the neutral as well as the belligerent nations that the neglect of children is not compatible with national safety, either in war or in peace. We had but to attempt to mobilize our youth for purpose military or industrial to see glaring evidences of public neglect," one might say, loss of public opportunity.

It would be tiresome to go into army rejections and their causes, but, roughly, it is safe to say that the greater portion of them represented preventable childhood diseases, which we neglected to prevent; which in the old days we were too niggardly to appropriate sufficient funds to prevent in our states and cities. If this could be taken as an example of a "penny saved is a penny earned," then what a wonderfully profitable speculation would it not have been to have spent that penny for child health and saved that man power to the country.

We know without going into figures that along with the Allies we lost during the war period thousands of our most promising citizens—the finest physically, finest in spirit that we were able to produce. A great many more potential parents, and therefore potential future citizens, were lost during the influenza epidemic of a year ago; the number of children lost to us, represented in these two causes alone, is not to be estimated, but we know that it must be many thousands. These bespeak but two types of child wastage. We know there are others, directly or indirectly connected with the war period—great reduction in the numbers of immigrants to the country, increased emigration—whole families leaving our shores; but, aside from these, day by day "poverty and disease, ignorance and neglect, silently accumulate losses, beside which these war losses seem negligible."

The two great slogans in use since our entrance into the war to the present day have been

"Conservation and Thrift." Not only does that apply to those very material things of our existence, but to child life: We are confronted to-day, not merely with the necessity for preservation of a national supremacy, or whatever you might term our degree of world dominance, but the preservation of our national identity and existence.

We are to-day in a great maelstrom of—who shall say what untoward events; we are menaced from within and without. Of the nature of our perils from without we know little; of the character of those from within we know much, but need to know more. In the resentfulness which we are all apt to harbor against those of our citizens who have failed to grasp the American handclasp of good friend and neighbor let us not forget that "the cradle and the hearth are mightier than either pen or sword in the ultimate creation of nationality, for from them alone and on them alone can greatness be built."

CLINICAL DEPARTMENT

ERYTHEMA MULTIFORME FOLLOWING DIPHTHERIA ANTITOXIN.*

By DENNETT L. RICHARDSON, M. D.
Providence, R. I.

Jacob A., age four years, was taken sick October 21, 1919, with diphtheria and admitted to Providence City Hospital, October 23. He was very slightly ill with a sore throat which was red, but there was no membrane present. His cultures were positive and a brother was admitted October 30 with a mild sore throat and positive cultures. On October 23, he was given 20,000 units of antitoxin intramuscularly. On November 7, or two weeks later, he developed a well

* Read before the Rhode Island Medical Society, December 4, 1919.

marked urticarial eruption. This eruption very rapidly changed in character, the lesions ranging from one half to three or four cm. in diameter, the smaller ones being circular with white centres and the larger ones irregularly oval. The edges were raised. The color was a dull red contrasting with white centres. There was some itching and a rise in temperature to 100.5° F.

At the height of the eruption, vesicles and small blebs appeared, which later became pustular and were slow in clearing up. The eruption faded out leaving well marged staining of the skin while the pustulation persisted for about three weeks from the beginning of the eruption.

DIAGNOSIS: Erythema multiforme (caused by diphtheria antitoxin).

COMMENT: Rashes following antitoxin administration practically always are urticarias. Rarely, other kinds of rashes develop of which this is an example.

MEASLES CONTRACTED IN UTERO.

Madelina A., 21 years old, was taken sick on May 14, 1917, with fever, sore throat, vomiting, and cough. She was admitted to the hospital May 21, having been in bed only one day. She had a rash on her body one day old. There were Koplick spots in her mouth, on admission, and her body was covered with a typical measles eruption. The subsequent course of the disease was that of ordinary measles.

On May 23, this patient, who was pregnant, gave birth to a normal baby. On May 30, the child developed a measles eruption. The rash faded on June 3. There was a temperature of 99½ to 101 degrees for four days. No Koplick spots were seen. The child seemed only slightly ill.

COMMENT: Either this child did not have measles or else was infected in utero, probably infected about May 16.



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EDITORIALS

THE ENCORE.

With this issue the RHODE ISLAND MEDICAL JOURNAL, after an enforced suspension of slightly more than a year, again resumes publication. It is a source of regret that the JOURNAL was obliged to suspend publication. The entrance of the business manager and two members of the Editorial Staff into the service imposed an added burden on the remainder of the staff. The faithful guard, who assumed extra duties at home that others might go to the front,

found that the publication of the MEDICAL JOURNAL would be the straw which would eventually break the camel's back. Consequently they wisely decided not to attempt it.

Now that the smoke of battle is cleared away and everyone is back home again trying to pick up the loose ends of a practice, the need of a Journal which shall have a strong appeal for the physicians of the State has become more and more evident. After careful deliberation and thorough investigation, the Committee on Publication has decided that it is advisable to revive the JOURNAL. A Medical Journal is a

distinct asset in any state, and about two-thirds of the states have such publications. In Rhode Island the JOURNAL serves as a convenient medium for publishing the transactions of the State society. These transactions are published monthly in convenient form and are a great improvement over the bound volume which appears but once a year. By the time this volume was issued the articles were nearly out of date, whereas the papers read at our meetings now appear in print a short time after they are read. The JOURNAL is a distinct advantage to the Medical Library by bringing to it many exchanges which would otherwise be missed by the readers. The library is in a position to subscribe for only a limited number of the journals.

The new business manager, Dr. W. A. Risk, has entered upon his work with commendable zeal. His efficient service as Treasurer of the State and city societies for many years assures us that the business end will be carefully administered. Advertising is the vital part of any publication, and every member of the society should consider himself a committee of one in the position of an assistant business manager. In many ways the physician can aid in securing advertisements, and he can always make the advertiser feel that his money has been well spent by commenting on the advertisement when the opportunity presents itself.

The Editorial Staff remains the same. The policy will be the same as heretofore. We wish every physician in the state to feel that this is his journal and that it is not published for any one section or any one group of men. We shall attack fearlessly any abuse or irregularities of medical practice or administration at all times. We shall likewise praise that which deserves praise. In our efforts we expect the support of the profession of the State in the hopes that they may find the JOURNAL a depository of the medical progress in these plantations.

WHAT IS THE MATTER WITH OUR MEDICAL MEETINGS?

Something is radically wrong with our medical meetings. For several years there has been a tendency in our society meetings to quote, "Let George Do it." This criticism applies not only to papers read, but to attendance. A

study of the secretary's records for the past few years will show that comparatively few local men have contributed to the literary programs of these meetings. Every president is at his wit's end to secure speakers for the succeeding meeting. His tenure of office is often a nightmare for this reason. There is plenty of clinical material in this state and plenty of literary ability to present a paper before any medical society in an able manner. Those who are capable of such efforts are not willing to make the sacrifice of time and labor. The societies are now so large that the president is unable to know the work or literary ability of all the members, and he is obliged to limit his invitations to men who come within his personal knowledge. Any member who has a paper which he desires to put before this society or knows of any suitable paper which can properly be read before the society should notify the president.

In the matter of attendance at meetings, we have a situation which is fast becoming critical. All of our meetings are much more poorly attended than they were a few years ago. The same faithful few may be seen at each meeting, keenly interested in the success of the meeting and of the society. We know many who come as often as possible and we know others who never come. It is only when a prominent physician from out of the state or when a well advertised picture show is on the cards that a large attendance can be assured. Another reason, we assume, for the smaller attendance of late is the poor quality of the luncheons served at some of our meetings. It is not only the army which travels on its stomach. All gatherings of men, whatever their profession, must provide substantial luncheons to be truly successful. It may be a sad commentary on human nature, but it is nevertheless true, and we must face it. If more delectable food will encourage better attendance at meetings, by all means let us have it. It is money well spent. The social half-hour in the supper room is of more value in promoting good fellowship and better understanding among the members of the profession than any other phase of professional life.

Medical societies are the cornerstones of the

profession. Without them we should quickly and hopelessly deteriorate. Let us encourage in every way a better attendance at meetings and the reading of more papers by home talent. The responsibility rests on every individual member.

FOR ALL THE STATE.

The editor wishes to point out with emphasis that this JOURNAL is for the state and not for a particular city or community in the state. If the JOURNAL is to fulfill its function it must have the support of the members of the medical profession all over Rhode Island. It is of as much interest to know what is happening in the Kent and Newport District societies as in those of Providence or Woonsocket. This opportunity, therefore, is taken to call to the attention of all the district societies, and especially of their secretaries, the desire on the part of the editorial staff to make this truly a RHODE ISLAND MEDICAL JOURNAL. The secretaries are earnestly urged to send a written report of their transactions that they may be published in the Journal and so make a permanent and complete record of the medical activities in the state. To the members of all the district societies we appeal for support. In the past, circumstances have made it appear that only papers read at 'medical societies' meeting in Providence were published in the JOURNAL. It is desired that every medical man who presents a paper before his district society will see that his paper is sent to the Journal and so made available for publication.

THE NEW PHYSIOLOGY.

The abiding worth and marvelous originality of Greek modes of thought are more striking to-day than at any time in human history. Men have lived long enough now to have followed as disciples other masters and to have found them wanting either wholly or in part, and this because such masters have lacked the directness of vision and the sweep of imagination that marked Greek thinkers. Contemporary philosophy, after many wanderings in the wilderness, is returning to Aristotle and contemporary medicine is learning once again

of Hippocrates and Galen. We hear much recent talk concerning biological conceptions of disease, the unity of the living organism and the adaptation of the organism to its environment; all of which is essentially Greek and so what appears at first sight to be new is really very old. While we have changed the answers to our problems, our methods of approach to them have changed but little, if at all.

Many of us who were taught the orthodox physiology of the last fifty years, the physiology of the school of Huxley, have often felt that there was something wrong with it, although what that something was we were not able perhaps to say. The elaborate paraphernalia of physics and chemistry with which we were supplied seemed somehow to fail us at the bedsides of sick patients; we knew so many things but in truth they appeared to be not just the things we wanted there and then to know. The result was that a gap developed and still exists between physiology and practical medicine and surgery. In the opinion of Professor J. S. Haldane, this gap will continue to exist until students are taught what he calls the New Physiology.*

And what is this New Physiology? It is Greek Physiology come to life again, not indeed as to its matter, but as to its spirit, teaching that the human body cannot be adequately described as a mere congeries of physical and chemical processes, but must be regarded as an unitary living organism whose business it is to maintain its normal structure and function against an ever changing environment. It is not enough to know physiological processes in isolation; you must study them in their relations to one another and to the whole of which they are the parts. As Professor Haldane expresses it, "Any form of Physiological activity is presumably related essentially, and not accidentally, to the other details of activity and structure in the same organism. Stated generally, therefore, the problem of physiology is not to obtain piece-meal physico-chemical explanations of physiological processes, but to discover by observation and experiment the relatedness to one another of all the details of

*The New Physiology and other Addresses, by J. S. Haldane, M.D., LLD, F. R. S., Philadelphia, J. B. Lippincott Co., 1919.

structure and activity in each organism as expressions of its *nature* as an organism." The mechanistic physiology so largely in vogue at present fails to do this and just here lies its most serious defect. If we look through an average existing text-book of physiology, we find a great deal about the effects of this or that stimulus, a great deal also about the external mechanism and chemistry of bodily activity—a great deal, in other words about what lies on the surface, but never takes us further. Along with this there are perhaps also some inconclusive discussions of the possible mechanism of such processes as physiological oxidation, secretion, growth, muscular contraction or nervous activity. Very little, however, will be found about the maintenance within and around the body of normal and organized structure and function.

But medicine is supremely interested in this physiological normal. What a man sees at the bedside is a perversion of the normal and Nature's attempts to restore it, with what assistance medicine can give. For medicine it is necessary to know the normal in its elastic and active organization. But the mechanistic physiology gives a minimum of information about the maintenance of the normal. One looks in vain in physiological text-books for the accounts of the regulation of breathing, circulation, kidney activity, general metabolism, and nervous functioning. The main facts of physiology are partly ignored and partly strewn about in hopeless disconnection and confusion. Hence it follows that what we learn in our physiological text-books helps us less than it should in practice. The new physiology will attempt to remedy these deficiencies by teaching us what health and disease really mean and how the body actually maintains itself under the ordinarily varying conditions of its environment.

All this is very interesting and we have quoted Professor Haldane to illustrate how very old is the new. Did not Galen have the keenest appreciation of the unity of the organism and of the inter-dependence of its parts? He placed it at the center of his medical thinking. Moreover was it not axiomatic with him that vital phenomena (physiological and pathological) can be understood only when considered in relation to the environment of that organism or part? And lastly did he not quarrel constantly with

Asclepiades and the Methodists because they said that absorption of food, the processes of respiration and the action of the kidneys could be explained on purely physical principles?

IMPROVE OUR CLINICS.

It is probable that but few of the citizens of Rhode Island who give of their time or money for the support of any of our hospitals or dispensaries which care for the sick poor, realize the extent to which they are conferring a benefit upon the sick rich, and indeed, upon all those who, when ill, are accustomed to depend upon the advice of a regular practitioner of medicine. This is because ninety per cent. of all progress in medicine is achieved in the free clinics; and by the character and equipment of these clinics, as well as the enthusiasm, ability and training of their visiting staffs, medical progress in the community is limited. Of what avail are experience, energy and ability to the carpenter who lacks adequate tools? If Rhode Islanders are to have the benefit of modern medical and surgical methods their hospitals must be supplied with the most up-to-date equipment; men must be found who can qualify themselves in the use of this equipment, and above all the spirit of conservative scientific investigation must be fostered. At present such conditions do not obtain. If, in the future, our hospitals are to be manned by internes who are first, second or even third rate men in ability and training, these hospitals must be able to offer them the opportunity of qualifying themselves in the medical and surgical procedure of the present day;—and furthermore, if we, as physicians, are to serve the community as we should and give our patients the benefit of twentieth and not nineteenth century medicine, the present condition of affairs must be altered.

DINNER TO SERVICE MEN.

The complimentary dinner tendered by the medical profession of the State to the physicians of Rhode Island who had served in the Medical Corps of the Army and Navy was one of the largest and most successful gatherings of medical men ever assembled within our midst.

Armistice Day was happily chosen as the most appropriate occasion for such a hearty welcome home. The dinner was excellent. The speeches, which were in lighter vein, all reflected the spirit of patriotism, which was the moving force of the day. The entertainment was varied and thoroughly enjoyable. It is difficult to estimate the influence for good which such a gathering of the profession creates. The more we see of each other in a social way the better for ourselves and the better for the community we serve. The great need of the profession is unity of purpose and of fellowship. Nothing tends to promote this beneficial spirit so well as an assemblage as that like on Armistice Day.

SOCIETY MEETINGS

RHODE ISLAND MEDICAL SOCIETY.

Quarterly Meeting, September 4, 1919, at Pawtucket Memorial Hospital, Pawtucket, R. I.

By invitation of the trustees of the Pawtucket Memorial Hospital, this meeting was held at that place. There were medical, surgical, urologic and orthopedic clinics in the forenoon, followed by a clam bake at 1 p. m.

The business meeting was called to order at 3 p. m., the president, Dr. J. M. Peters, in the chair.

In the absence of the secretary, Dr. H. G. Partridge was elected secretary *pro tem.*

The records of the last meeting were read and approved. The following papers were read:

1. The Pathology of Influenza, by Dr. Medler, Pathologist to the Rhode Island Hospital.
2. Influenza in Hospitals, by Dr. G. S. Mathews.
3. Vaccines and Serum in Relation to Influenza, by Dr. F. T. Fulton.
4. Influenza in Private Practice, by Dr. Henry A. Cooke. Discussed by Drs. Hartwell, H. A. Jones, Jay Perkins and others.

Mrs. Donald Churchill spoke briefly regarding the matter of military rank for nurses, engaged in army nursing.

A rising vote of thanks was tendered the trustees and officials of the Pawtucket Memorial

Hospital for their generous hospitality.

On motion adjourned.

H. G. PARTRIDGE,
Secy. pro tem.

REPORT OF THE COUNCIL MEETING.

The regular meeting of the council was held this day, November 20, 1919, Dr. J. M. Peters, president, presiding.

The minutes of the previous meeting were read and approved.

It was voted that it be recommended that the House of Delegates fix the annual dues for the current year at \$10, and that \$1 per member annually be appropriated from the treasury toward the support of the RHODE ISLAND MEDICAL JOURNAL.

It was voted to recommend that the House of Delegates employ an official stenographer, at an expense of not more than \$10 per meeting, to record the transactions of the meetings.

The council recommended that a committee composed of the secretary of the Rhode Island Medical Society, and the secretaries of the district medical societies be a committee to increase the membership of the State society.

Dr. Hoye presented the treasurer's budget for 1920 which was approved.

BUDGET 1920.

Printing and Postage.....	\$ 150 00
Interest	144 00
Librarian	1000 00
Janitor	360 00
Gas and electricity.....	125 00
Fuel	450 00
*Collations	500 00
Books and binding	50 00
Repairs and supplies	250 00
Insurance	16 00
Safe deposit	5 00
City water	15 00
Telephones	75 00
Unforeseen liabilities	300 00
Publication	400 00
Stenographer	40 00

	\$3880 00

*If annual dinner given.

It was voted that the fees of the trustees of the Fisk Fund S. A., which have been donated by the trustees to the society, be placed to the credit of the Endowment Fund.

Adjourned.

J. W. LEECH, M. D., *Secretary.*

HOUSE OF DELEGATES.

The House of Delegates met this day, November 20, 1919, at the Medical Library, Dr. J. M. Peters, president, in the chair.

The report of the council meeting just preceding, was read by the secretary.

The recommendation of the council was read and approved as follows:

1. That the annual dues for the coming year be fixed at \$10, and that the appropriation of \$1 per member annually be appropriated from the treasury toward the support of the RHODE ISLAND MEDICAL JOURNAL.

2. That an official stenographer be employed at an expense of not more than \$10 per meeting to report the transactions of the meetings.

3. That a committee to increase the membership of the State society, composed of the secretary of the Rhode Island Medical Society, and the secretaries of the district medical societies be formed.

4. That the treasurer's budget for the ensuing year total \$3880, be adopted.

A communication from the A. M. Association requesting information and coöperation in the formation of graduate instruction to the members of the State society, was referred to the committee on hospitals.

Adjourned.

J. W. LEECH, M. D., *Secretary.*

QUARTERLY MEETING.

R. I. MEDICAL SOCIETY LIBRARY BUILDING.

December 4, 1919.

The regular quarterly meeting was held December 4, 1919, at the Library Building, Dr. John M. Peters, President, in the chair.

The meeting was called to order at 4:15 p. m., and the minutes of the September meeting, and the report of the proceedings of the House of Delegates, were read by the Secretary.

The President made the following appointments:

Anniversary Chairman—Dr. George W. Van Benschoten.

Member-at-Large, Board of Trustees Medical Library—Dr. Fenwick G. Taggart.

Delegates to Medical Societies: 1—Maine, Dr. W. B. Cutts, Dr. G. E. Simpson; 2—New Hampshire, Dr. A. H. Ruggles, Dr. N. C. Baker; 3—Vermont, Dr. M. P. Mahoney, Dr. E. B.

Fuller; 4—Massachusetts, Dr. W. F. Barry, Dr. S. M. Bennett; 5—Connecticut, Dr. C. S. Christie, Dr. C. G. Savage.

The President announced the death of Dr. George D. Hersey, for years a Fellow and former officer of this society. Dr. W. R. White presented a memorial of Dr. Hersey and by a rising vote the Secretary was instructed to send a copy to the family.

A paper "Advances in the Surgery of the Extremities during the War," was presented by Dr. Murray S. Danforth, Providence. Discussion was opened by Drs. Robert B. Osgood, Boston, and Roland Hammond, Providence, and continued by Dr. F. E. Peckham.

CASE REPORTS: Dr. F. T. Calef presented specimen and photographs of fetal monstrosity.

Dr. D. L. Richardson reported a fatal case of smallpox occurring in a nurse not protected by vaccination; a case of woman with measles, who gave birth to a child which developed a measles rash soon after birth.

Dr. G. S. Mathews reported a case suggesting typhoid and a second case of pneumonia with abdominal symptoms predominating.

A collation was served after a motion to adjourn in verse by Dr. William R. White, voted by acclamation.

J. W. LEECH, M. D., *Secretary.*

HOSPITALS

RHODE ISLAND HOSPITAL.

The annual meeting of the Staff Association was held at the hospital, December 8, 1919, at 9 p. m. Dr. N. Darrell Harvey was elected President, and Dr. Norman C. Baker, Secretary. The members of the staff selected terms of service for the succeeding year. Considerable discussion of a contemplated new system of records followed.

MISCELLANEOUS

A CALL FOR NATION-WIDE HEALTH CONSERVATION.

Preventable disease, cost the United States four billion dollars less in 1917 than it would had the health conditions of 20 years ago prevailed in 1917.

Four hundred thousand less deaths occurred in 1917 than would have, had the 1900 death rate prevailed.

Annual illness of workers still costs this country two billion dollars each year.

One man in every three called by the Army was found to be physically unfit.

These figures were given out by Surgeon General Rupert Blue of the United States Public Health Service, in urging a plan for nation-wide conservation of health and calling on all health agencies to coöperate in a carefully prepared program.

Surgeon General Blue has sent a letter to State and city health officers, to the head of the American Red Cross, the American Public Health Association, the American Medical Association, the National Tuberculosis Association, the International Health Commission, the National Safety Council, the American Child Hygiene Association, and other health agencies, suggesting a conference in Washington to consider a health program prepared by the Public Health Service.

The Surgeon General points out that practically all of these agencies have under consideration some plan of health conservation and that unless the work can be coöordinated and properly directed, little will be accomplished and there will be much over-lapping of effort and waste of funds.

It is emphasized that the success of the plan will be determined by its direct applicability to the conditions in the different local communities and for this reason Federal, State and local health officers must coöperate most closely in order to direct the campaign in each community and set a definite objective.

For instance, a Southern city would be more interested in a campaign against the mosquito and malaria than it would be in Rocky Mountain spotted fever. A Northern industrial city would be more interested in the control of pneumonia and respiratory diseases. All, however, have cancer, tuberculosis and venereal diseases; all would be benefited by public health nursing, medical supervision of school children, conservation of the lives of mothers and children, adequate sewage disposal, the provision of pure water and pure milk. So, while each city and rural community will have as a definite objective the most vital need in that particular place, the various health agencies will have definite objectives according to the particular problem they set for themselves to solve.

The health program to be submitted to the conference has been in preparation for months, experts of the Public Health Service long having foreseen the need of such a nation-wide effort. A preliminary announcement of the plan was made at New Orleans at the recent meeting of the American Public Health Association which gave unanimous endorsement.

Few realize what has already been accomplished in the field of preventive medicine or what can be done by a carefully executed health program which is cumulative and continuous rather than spasmodic and desultory in character.

In 1900 the general death rate from all causes in the United States was 17.8;—in 1917, the latest figures available, it had been reduced to 14.2. Had the 1900 death rate prevailed in 1917, there would have been in the United States, with an estimated population of 110 million, 396,000 more deaths than actually occurred.

The record of other years leaves little room to doubt what may be done in saving life. In 1900 typhoid fever caused a death rate of 33.8 per 100,000 population. In 1917 the rate had been reduced to 13.4. Diphtheria was reduced from 35.4 to 16.5 in the same period. Tuberculosis declined from 190.5 deaths per 100,000 of population in 1900, to 146.4 in 1917. Had the 1900 rate prevailed in typhoid fever, diphtheria and tuberculosis, in 1917 these three diseases alone would have caused 91,740 more deaths than actually occurred.

The Public Health Service is led to believe that its health program is feasible, owing to the fortunate coöperation and successful termination of the extra cantonment work which was carried on so efficiently by the American Red Cross, State and local health authorities and the United States Public Health Service. The lesson taught by this splendid demonstration of team work should not be lost to the country. For this reason, the American Red Cross, which has set aside millions of dollars for health work in the United States, has been asked to take an active part in translating the health program into action. Its thousands of local chapters are counted on to arouse and maintain interest in health work and actively coöperate with Federal, State and local health officers in accordance with the announced policy of the American Red Cross to cooperate with existing health agencies.

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ORIGINAL ARTICLES

PRESIDENT'S ANNUAL ADDRESS.*

By HARRY W. KIMBALL, M. D.,
Providence, R. I.

The By-Laws require the president to deliver an address at the annual meeting. Just why this should be so, I have never been able to find out, but inasmuch as it is so, this will cover my excuse for boring you tonight.

I appreciate the honor you conferred upon me one year ago when you elected me your president, and I am keenly aware of my many shortcomings in the year just passed, and am sure that the year to come will be a year full of good things, medically, for this Society.

Owing to the war and the many doctors serving with the colors, our meetings have, of necessity, been poorly attended, but now that these men have returned, and with the wealth of experience gained, the coming year should be a most profitable and interesting one for the Society, both medically and socially. It is not necessary for this Society to go outside of its own membership for original and instructive papers. Providence is rich in clinical material, and the medical men of Providence are as up to date and as well qualified to write and present original papers as are the medical men of any city in this country. To be sure, we have no teaching medical institutions, but our hospitals are second to none, and our clinical material varied and large enough to furnish instructive papers, and reports of cases far in excess of the needs of a much larger association than ours. Also our medical men are potentially as good writers and clinical observers as are the men in other cities who do more writing for publication than we do here in Providence.

After visiting clinics, hospitals and medical societies in other cities and noting the work of

medical men of wide reputation, I have been struck many times by the fact that right here in Providence, just as good operations are being performed, and as good diagnoses being made as is in clinics of wider reputation.

Even without the teaching incentive there is no possible excuse for you gentlemen not writing more, not collecting your cases and reporting them more frequently. Then we come to discussions: Many times, after a meeting, you will come upon a group of men in the supper room vigorously discussing the paper among themselves and this informal discussion is usually very much worth while, but why do it in groups, privately? Why not on the floor where every one can hear it, and learn something from such a discussion. Our discussions are too much of the mutual admiration type, commonly prefaced by the stereotyped phrase, "I enjoyed so much Dr. Blank's paper, and agree with him in every particular." Now, as a matter of fact, we do not all agree with Dr. ——, and why do we who do not agree, say so, and why don't we state our reasons for not agreeing?

Certainly an honest difference of opinion between medical men over a complicated medical problem can never and should never alter friendly relations between them. On the contrary, it should lead to a broader, better and more scientific understanding of the problem under discussion. An honest difference of opinion, expressed without malice, can never do harm, but is always a factor for good; so allow me, on this, my last night as presiding officer of this Association, to make an earnest plea to every member to write papers and present them to the President so that he will not find it necessary to chase up men, plead with them to write something, and urge others to open discussions. Better, let him have a list of available papers to choose from, and if there be so many presented that they cannot all be read at one meeting, bear in mind that there are other meetings coming, and other papers needed.

* Read before the Providence Medical Association, January 5, 1920.

Also, let me urge discussions, brief and to the point, not the rambling kind that starts with appendicitis and ends with zoster, but short, sharp and critical discussions. If a member disagrees with the writer, or has a method which he believes to be better than the one the writer describes, let him boldly say so and be prepared to defend his contentions of superiority. No man is necessarily conceited who thinks his method is the better one. He only is a conceited ass, when a better one has been shown him and fails to recognize it.

In conclusion, gentlemen, I want to again thank you for the honor you conferred upon me when one year ago you elected me your President, and I want to bespeak for my successor the loyal support of every member of this association,—write papers for him, discuss freely papers that have been read,—report cases so that other members may have the advantage of your clinical experience. And above all, remember that the success of every medical association depends not alone upon its officers, but on the rank and file of its members.

ABSTRACT OF PROCEEDINGS OF

AMERICAN PROCTOLOGIC SOCIETY.

Twentieth Annual Meeting, Atlantic City, N. J.

June 7-9, 1919.

Officers elected for the ensuing year:

President—Collier F. Martin, M. D., Philadelphia, Pa.

Vice-President—J. Coles Brick, M. D., Philadelphia, Pa.

Secretary-Treasurer—Ralph W. Jackson, M. D., Fall River, Mass.

Executive Council—Jerome M. Lynch, M. D., New York City; Collier F. Martin, M. D., Philadelphia, Pa.; Dwight H. Murray, M. D., Syracuse, N. Y.; Ralph W. Jackson, M. D., Fall River, Mass.

The next meeting will be held at Memphis, Tenn., April 22 and 23, 1920.

ABSTRACT.

PRESIDENTIAL ADDRESS.

By Jerome M. Lynch, M. D., F. A. C. S.
New York City.

Dr. Lynch said that it was two years since the Society last met, and in that time great changes

had taken place. Many of the members had been in the service of the country, either here or over-seas. During this period there was little opportunity for original work in their special line; but now that the war is over and peace is in the offing, it behooved them to make up for lost time, and to make every endeavor to bring a better understanding of diseases of the alimentary canal.

It is necessary to educate the public, and this can be done only if the physician himself is master of his subject. Specialization is important, but it is essential that one have a comprehensive sight, since he of narrow caliber is a dangerous man. The man of liberal training is a cosmopolite; the other a provincial.

It is impossible to study the alimentary canal segmentally, since all its parts are so closely related and correlated that one is apt to misinterpret symptoms by confining his interest to one segment. There is no more important problem in connection with the subject of disease than the proper interpretation of symptoms; and it is of the first importance that one should know embryology, anatomy, physiology and the other fundamentals for such interpretation.

Since, embryologically, the alimentary canal is divided into a fore and a hind gut, and since the hind gut includes about thirty inches of the ileum, which is capable of taking on the function of the colon, it is self-evident that this whole segment should be included in their special work.

They must be, not only good proctologists, but trained abdominal surgeons as well. Otherwise, how will it be possible for them to perform the most difficult operation in surgery—that for cancer of the rectum? This disease comes much more frequently under the observation of the proctologist than under that of the general surgeon. How can one justify his reputation as a specialist, unless he is equal to the task? In the past men of very slight surgical knowledge took up proctologic work; but now the time has arrived when only men of proper training can hope for success as specialists in their line.

Dr. Lynch trusted, therefore, that the American Proctologic Society would take cognizance of the essentials for winning that recognition, which can be gained only by good work, well done.

ABSTRACT.

SOME OBSERVATIONS ON PRURITUS ANI.

E. H. Terrell, M. D.,
Richmond, Va.

Dr. Terrell stated that during the past seven months he had examined forty-four patients with pruritus ani. In thirty-nine of these small infected sinuses were found at or just beneath the ano-rectal line, and from these a small probe, bent at an acute angle, was found to pass downward under the skin of the affected parts. A careful and painstaking inspection of every part of the anal canal is necessary in locating these sinuses, and Dr. Terrell has found the "Physiological Anal Speculum", devised by Dr. F. P. Nourse of Lewiston, Idaho, the best instrument for this purpose. In the severe cases of pruritus from three to four sinuses were found, but in the milder localized cases not infrequently only one sinus was found. It is the opinion of the author that the irritation from one sinus involves not more than one-fourth of the circumference of the anus.

The treatment consists in opening the sinuses from above downward, under local anaesthesia, using a bent probe as a guide. Twenty-five cases have been operated on by Dr. Terrell, after this manner, with complete relief of the symptom when the parts had healed.

ABSTRACT.

THE USE OF APOTHESEN IN RECTAL SURGERY.

William M. Beach, M. D., F. A. C. S.,
Pittsburgh, Pa.

Dr. Beach said that modern surgery includes in its demands for finesse, freedom from terror, pain, post-operative complications, speedy recovery and careful technic. Local anaesthesia enables one to meet these requirements and he finds apothesine superior to most of such anaesthetics. It is a synthetic chemical in regard to which he draws the conclusions, that it is relatively low in toxicity; is non-irritating and does not interfere with primary wound healing; is free from bad after effects; can be sterilized by boiling; combines well with adrenalin; and is soluble in water and stable in solution. He uses it in the spinal canal, for nerve trunk blocking, and for local infiltration. The solution is usual-

ly from 1/2 down to 1/10 and never over 1. It is equal in power to any other local anaesthetic, but more slowly absorbed; and 2 to 10 minutes should be allowed after introduction before beginning the operation. He has used apothesine in 30 cases of ano-rectal surgery in the past two years with no untoward effects except in three cases, which he cites, and in all of which the same effects might have happened under any method of anesthesia. Any patient must have a normal resistance against bacterial invasion to avoid complications; and local anaesthesia, especially if the solution used be weak, is probably safer than general anaesthesia. He describes his technic in the use of the drug about the anus and has found it satisfactory even in complicated fistula operations; and further he used it in colostomies and other abdominal operations. He has practically abandoned the use of morphine and scopolomine prior to operations, and the former is seldom required afterward. It is, too, absolutely non-habit forming and does not require a Harrison order to obtain it.

ABSTRACT.

COCCYGODYNIA: FURTHER EXPERIENCE WITH INJECTIONS OF ALCOHOL.

Frank C. Yeomans, M. D., F. A. C. S.,
New York City.

Dr. Yeomans said that theories advanced for the causation of the leading symptoms, pain in the region of the coccyx, are: 1, Neuralgic; 2, Neuritic, 3, Injury, and 4, Sympathetic. The first three are based on traumatism and comprise the major number of cases. The traumatism is within the pelvis, as in labor, or external, as a fall. As a rule the periosteum of the coccyx only is injured and the soft parts adjacent to the bone. Injury of these structures initiates an inflammatory reaction with proliferation and later contraction of the new-formed fibrous tissue and compression of the nerves which traverse it, causing neuralgia or neuritis. Fracture or dislocation of the coccyx may cause pressure pain.

The characteristic pain is spasmodic and aching, aggravated by sitting or rising, but not affected by urination or defecation.

The diagnosis is made by a bidigital examination—the index finger in the rectum, the thumb making counter-pressure outside—thus palpating

the coccyx and compressing the soft parts adjacent to it, to determine the portion of the coccygeal plexus of nerves involved.

There must be excluded diseases of the spine and of the nervous system, as tabes, and locally lesions of the anal canal and rectum simulating coccygodynia, as anal fissure, cryptitis, papillitis, blind internal fistulae, thrombosed hemorrhoidal veins, proctitis and foreign bodies in the rectum; also, in women, disease of the external and internal genitals and, in men, of the urogenital organs.

The prognosis in general is good on the ground that the pain resides in the coccygeal plexus of nerves and not in the bone as was formerly supposed.

The treatment is an application of the principle of injecting sensory nerves with 80 per cent. alcohol, thereby causing their degeneration, as suggested by Schlosser in 1907, and practised with marked success in trifacial neuralgia.

The injections are made aseptically, without anaesthesia, at the office. A sterile syringe is filled with 20 per cent. alcohol and armed with a 2-inch needle of fine gauge. The point of maximum tenderness is determined bidigitally, then, maintaining the index finger in the rectum as a guide, the needle is carried through the skin of the mid-line to the tender spot and 10 to 20 minims are injected slowly. The interval between injections is five to seven days.

The writer has had 28 cases in all, of which he treated 24; and of these 20 were females and 4 males.

External trauma was responsible for 15 cases; difficult labor, 3; 2 followed local operations and in 4 the cause could not be determined.

The duration of the pain before operation was from three weeks to fifteen years, averaging 22 months.

The number of injections varied from 1 to 10, average 4.

Results of treatment: Clinically cured, 16; relieved, 7; failed, 1.

Elapsed time since treatment varies from three months to nine years.

The only case of failure was in an otherwise healthy, robust girl, aged 10 years. As no benefit followed 10 injections, the writer excised the coccyx in October, 1919, with immediate relief of pain and no recurrence.

ABSTRACT.

OBSERVATIONS IN ARMY PROCTOLOGY.

Louis J. Hirschman, M. D., F. A. C. S.,
Detroit, Michigan.

Dr. Hirschman said that the practice of proctology in American Expeditionary Forces did not differ greatly from that in civil life. The environment was different, the patients were all males, and wounds of the bowel and bacillary dysentery were much more common. True pruritus ani was entirely absent, which was difficult to explain even among such supposedly picked men, for hemorrhoids, fissure, abscess, fistula, co-litis, etc., were common. Many cases of chronic rectal conditions, particularly hemorrhoids and fistula, most of them antedating the war, had to be sent to the hospital. This was a serious commentary on the inadequacy of the enlistment examinations, for the conditions were aggravated by camp and trench life, and such patients filled many beds, depriving battle casualties of the hospitalization to which they were entitled. Much of the tax on military facilities, and much loss of military effectiveness might have been spared if the examination had been thorough on this side. The Base Hospital Organization made possible specialization in surgery, more effective care, and quicker convalescence and return to the ranks. Local anaesthesia was employed whenever possible; the Carrel-Dakin irrigation and sometimes secondary suture were used in wounds, abscesses and fistulae; and all helped to the same result. The proctologist combining his work with abdominal and hernial surgery, whether at the Base Hospital or at the front, was able to render the most valuable aid. Dr. Hirschman concludes that "the proctologist brought infinitively more to the service than he could hope to get from it professionally."

ABSTRACT.

THE INCREASING PREVALENCE OF CERCOMONA INTESTINALIS HOMINIS INFECTIONS.

John L. Jelks, M. D., F. A. C. S.,
Memphis, Tenn.

Dr. Jelks said: I observed the frequent association of flagellate infection with that of amebic ulceration of the rectum and colon, as

early as I began the microscopic study of ameba and other causative agents in diarrhea. That was in 1900, and very soon thereafter, I concluded that, even when I had a known amebic ulceration of the gut, the flagellate played an individual roll in the establishment of a more superficial pathology. Particularly during the last five years, I have observed the pure cercomona infections. It appears to me that each succeeding year, I see more cases and greater virulence and severity of symptoms; and some of the patients seen during the last two years were most pitiable objects of human physical depravity.

In severe cases, there are from 10 to 30 stools per day. These are not the amber colored, or the sanguino-muco-purulent and very offensive stools seen in amebic cases, but are like those seen in typhoid fever and in the acute diarrhoea of pellagra. The pathology appears the same in character as that of pellagra. This fact I referred to at the last meeting of the Proctologic Society in New York. The rapid loss of weight, neurosis, anaemia and melancholia, while not constant, are in some cases profound, and are conditions common to both cercomona infections and pellagra. Mania may even be suicidal.

The increase in prevalence and virulence of cercomona infections has been so noticeable in my section of the Mississippi Valley, that I view the situation with some degree of alarm, and am of the opinion that some steps should be taken to find the source from which they spring. Unless concerted effort is made to control them cercomona infections may not be so restricted to the south, as at present appears to be the case, but will be wide spread, and an epidemic outbreak will be, among infants and children at least, appalling.

The treatment may be outlined. All carbohydrates are eliminated and the diet is restricted as nearly as possible to albumens, milk, meat juices, fowl and gluten bread. The intestinal tract is emptied preferably with salts or castor oil, and then bismuth subnitrate is given, two to four drachms, every four to six hours, followed by phenomethyl-formate, ten to fifteen grains in salol-coated capsules, or, hexamethylenamin, ten grains. This is continued a week, then the bowel flushed out with salts or oil again and the treatment resumed; the theory being that liquifying the intestinal content will permit

the bismuth to incorporate the infecting organisms, and that adding formaldehyde and methylene will supply a bismuth-methyl-formate, a powerful parasiticide.

It is impossible to rid one of this infection in a few days by any treatment, and most cases will dismiss themselves from your care when they feel well and have regained their weight and strength, though many of them you know are not well, and become therefore disseminators of the infection.

ABSTRACT.

DAKIN'S SOLUTION AND DICHLORAMINE-T IN PROCTOLOGY.

J. Coles Brick, M. D.,
Philadelphia, Pa.

Dr. Brick said that Dakin's Solution presents many difficulties in its manufacture, is unstable when made, tends to become caustic, and will not keep. Chloramine-T gives up its chlorine less rapidly, has greater antiseptic value and is less irritating. Dichloramine-T solutions are unstable, and, when prolonged germicidal action is required, it is preferably used in an oily solution, the preparation of which he described. Chlorcosane is preferred by some as a solvent and is used in the U. S. A. and U. S. N. He quoted Dakin and Dunham "Chloramine-T and Dichloramine-T give materially better results than the hypochlorites when acting on organisms in a blood medium."

He reported the case of a patient, greatly debilitated by a persistent muco-purulent diarrhoea from a hemorrhagic catarrhal proctitis, sigmoiditis and colitis, the etiology of which was not demonstrable. Treatment by colonic irrigations with antiseptic and astringent solutions, first by rectum and then by means of an appendicostomy, were of no avail till finally Dakin's Solution was used up to 10% strength through the appendicostomy, with immediate improvement and final cure.

The writer was lead then to use these agents through the sigmoidoscope as adjuvants in the treatment of cases of amebic dysentery and concludes that they will prove valuable parasiticides in recto-colonic infections.

ABSTRACT.

MULTIPLE ADENOMATA AND ESTHIOMENE
MALIGNANS.

(Illustrated with lantern slides).

Collier F. Martin, M. D.,
Philadelphia, Pa.

Dr. Martin reported first a case of multiple adenomata. The patient, a woman, complained of considerable abdominal pain and constant desire for stool. Bowels had to be moved as soon as she had eaten, considerable blood and mucous being passed at the time. The entire lower bowel was found filled with adenomatous tissue, a portion of which protruded through the anus at the time of stool. Under ether anaesthesia, as much of the growth as could be prolapsed through the anal canal, was ligated and removed. She had a rapid recurrence of her symptoms, and six weeks later had a left inguinal colostomy performed by Dr. William A. Steel. At the site of the operation the bowel appeared normal. About six weeks later, the colon began to evert and prolapse through the abdominal wall; and the mucous membrane became studded with small adenomatous tumors. A colectomy was advised, but the patient did not consent. At the present time she has improved in general health, and has gained considerable weight, but the outlook is very poor.

He then reported a second case under the title of Esthiomene Malignans, referring to the clinical appearance and not to the pathology.

The patient, a man, presented himself for examination in April of this year. After driving an ammunition truck in France for several months, he was sent to the hospital because of disability. While there he was treated for entero-colitis. Finally he was sent to the States and discharged from the service. The entire anal aperture was obliterated by a hard indurated mass of new tissue. The skin was greatly thickened and slightly reddened. The induration extended well over to the tuberosities of the ischia. It was almost impossible for him to have a stool except after great effort. He had a constant burning pain when sitting, so intolerable that he rarely assumed this position. The abdomen was somewhat extended and tympanitic. The appearance of the skin about the

anus resembled those cases which have been classified as Esthiomene, due to syphilis and tuberculosis. A colostomy was performed, and a piece of tissue removed from the posterior margin of the anus. The entire pelvis was filled with a solid mass of new tissue, with many nodules scattered over the colon and in the mesentery. A report from the pathologist showed the tumor to be a myxo-sarcoma. The operation was performed on May 9, and since then the abdominal tumors have apparently increased in size and number. There is some swelling of the feet, and the patient is beginning to show irritation of the bladder. He has been receiving Coley's serum, but is rapidly growing worse.

ABSTRACT.

VACCINE TREATMENT FOR PRURITUS ANI:
POSSIBLE REASONS FOR FAILURES WITH STOCK
VACCINE.Dwight H. Murray, M. D., F. A. C. S.,
Syracuse, N. Y.

Dr. Murray said that pruritus ani was always a disease most stubbornly resistant to all kinds of treatment, and that it was now nine years since he had established to his own satisfaction that the etiological cause was the streptococcus fecalis, and that since then he had found practically 100% of the cases were the result of this infection. His theory was at first met by the usual crop of unbelievers, but since this many have acknowledged its correctness.

He used autogenous vaccines with marked success in lessening the intensity and frequency of the itching and has cured most cases, and has used stock vaccines with less success. Complicating infections, such as staphylococcus aureus and bacillus coli, may require mixed vaccines for complete relief.

The extreme difficulty of having bacteriologic work done in most places make a stock vaccine most desirable. Four years ago one commercial house put out such a vaccine for experimental purposes, but the reports on its use did not show sufficient successes to warrant marketing the product. Yet some reports received by Dr. Murray from men who had experimented with this firm's vaccine, were distinctly favorable.

Dr. Murray's conclusion as to the comparative value of autogenous vaccines are as follows:

1. Stock streptococcus faecalis vaccine is not quite as efficacious as autogenous vaccine.

2. Failure to get relief is possibly the fault of the operator, or because of a complicating infection, and should have further bacteriological investigation.

3. Large doses are innocuous so far as by-effects are concerned.

4. It is a mistake to fill the mind of the patient with doubt as to the efficiency of the treatment or the ability of the physician in charge even though he has had little or no experience.

5. Correction by operation of local pathology present with pruritus ani will not relieve the itching, when an infection of the skin is present.

6. The presence of local pathology with pruritus ani is coincident.

7. Stock vaccine should be made and supplied to the profession with the understanding that relief is not promised in any sense, but is expected.

8. Investigation and failures are good things and beget our earnest and careful efforts to find the truth.

9. Neither an investigator nor his work can be considered the last word, and for this reason we should all work together without bias to the end that the best results of treatment may be found for these unfortunate sufferers.

CLINICAL DEPARTMENT

REPORT OF CASES.*

By GEORGE S. MATHEWS, M. D.,
Providence, R. I.

CASE I.

Mrs. S., age 35, was admitted to the Rhode Island Hospital complaining of chills, headache and general malaise. The history of this case was that ten days before admission she got her feet wet and her skirts dampened, and the following day complained of pains in the back, legs and arms. Two or three days later a physician was called. A temperature of 102 was found and a pulse of 100. She had a slight cough. The Widal was done and was found

negative. After four or five days' development at home she was admitted with a tentative diagnosis of typhoid fever. At the hospital she had a temperature of 100 to 102 in the evening, but the pulse was rather high, varying from 100 to 120. Respirations were approximately in the neighborhood of 18 or 20. Widal tests taken five or six times successively were negative. The phenolphthalein tests were negative. The throat cultures were negative. The stools were negative for typhoid bacilli. The morning temperature was 99, and the evening temperature 100, for an even two weeks and then finally the morning temperature was normal and the evening temperature 99 until the time of discharge from the hospital. The pulse remained rather persistently high, varying, as I said before, from 100 to 120. The white counts, of which there were five or six done, were 18,000 or slightly below with a hemoglobin of 90. The differential count was apparently within normal limits, from 60 to 70 polynuclear and 26 lymphocytes. The urine was negative. There was nothing in the sediment. The teeth were X-rayed and reported negative. Nothing was found on throat examination. Stereoscopic plates were absolutely negative. The heart was negative on examination. No murmurs heard in any position that the patient was placed. The patient was discharged from the hospital with a diagnosis of probable typhoid fever. Since going home, the temperature was very near normal and then again up to 100. The chest examination was negative. She had a persistently high pulse, as high as 140 at times. There was no evidence apparently of a substernal thyroid. The chest showed no expansion, no tremors, and the atropine test has been negative. She tires easily, and has gotten sick and tired of remaining in bed. Her bed has been moved out-of-doors by direction of her medical advisor. The question is, What is the diagnosis?

(The suggestion of tuberculosis as a diagnosis, made by Dr. J. E. Mowry, met with the approval of the meeting.)

CASE II.

We see this class of case at the hospital more or less often. This patient is a child 10 years old, admitted with a diagnosis of appendicitis. Four days before admission she complained of chills and pain in the appendix. Two days after

* Read before the Rhode Island Medical Society, December 4, 1919.

the first appearance of pain in the appendix, she began coughing. The temperature was 103; the respirations were 35, and the following day the respirations were 30 and then varied from 30 to 35. On examination of the abdomen she complained of some abdominal pain confined to the right hemisphere, but on careful palpation there was no especial tenderness at any point in the abdomen, and no muscle spasm. On examination of the chest, there was nothing to be found. Breath sounds and voice sounds were absolutely negative and there was no dulness on percussion. This condition prevailed until about four days later when the temperature dropped. Twelve hours later there was bronchial breathing over the middle and lower lobes of the right lung. The symptoms point to a probable appendicitis. The case was not operated upon. No lung signs were found at that time, and not until about twelve hours after the crisis, when the temperature dropped, was there a first real definite lung sign reached.

LETTER TO THE EDITOR.

To the Editor: There are three reasons for burdening you with a letter for the JOURNAL, first my promise, second I know from sad experience how necessary is a certain amount of "fill in" matter in the make up of the JOURNAL and third a natural desire to say "hello" to my friends in Providence and possibly to make them a little envious of my enjoyment of a long vacation period after forty years of practice. I think a physician is entitled to a Sabbatical year at least twice in a century.

If any heading is necessary you may call it A Rhode Islander's Experience with Sharks, for I have met all varieties.

The first was of the genus U. S. R. R. administration which takes your money and puts you in a Pullman so old and decrepit that in my compartment there was scratched on the antique woodwork the initials G. W. Evidently Washington used that car in his journeys to or from Mt. Vernon. There was no way of controlling the heat, no water to drink or in which to wash, and the closets were flushed by hot air furnished by the user.

The dining service was poor and the road bed bumpety-bump.

When I was able to sleep I dreamed I was in a Ford being carried to the hospital where I was to be operated for a sort of talipes the same being acquired by trying to crowd six feet of my anatomy in a berth five feet and eight inches long.

As soon as we reached California we encountered other varieties of sharks, although en route fine examples of the hotel shark indigenous to all parts of the country were encountered.

In New Orleans we found one who with great secrecy whispered that if we desired a bottle of wine with our dinner he could get us one and we paid twelve dollars for an eighty-cent bottle of St. Julien.

Oil sharks, real estate sharks, citrus sharks,—all are found in California preying upon the unsuspecting tourist. There is fortunately one sure method of escape, poverty and lack of available funds and after we had been in California one short week we were liable on both counts.

In any description of California one must steer clear of the glowing guide book phraseology and at the same time such dry statistical details easily obtained from books of reference and from now on my ideas may resemble an old fashioned shotgun prescription, a series of impressions without order, or sequence and possibly of as little value as the aforesaid prescription.

In five weeks of sojourn in Southern California we have had continuous sunshine and a temperature ranging from 70° to 82° F.

Indeed climate is California's greatest asset and is entirely responsible for its greatest crop,—the tourist. I said entirely but that is not true for its scenery, its thriving cities, its miles of orange groves and its hundreds of miles of perfect roads, bordered by roses and geraniums and shaded by millions of pepper, camphor, olive and eucalyptus trees presents a charm to the visitor not readily expressed. As far as the eye can reach, as a frame for the tropical picture, are the mountains towering high, with snow-capped summits and gashed by huge canyons, the only exits from the lovely valley of Southern California.

From Yuma, Arizona, through the desert, and by the side of the Salton Sea, the old bed of

the mighty Colorado River, desolation reigns supreme. There is neither beast nor bird,—just sand, rocks, and more sand save where a natural oasis or artificial irrigation has caused the desert to blossom like a rose and immense acreages of cotton and maize show what water will do to this otherwise unfertile soil.

From the Salton Sea, two hundred and sixty-four feet below sea level the mountains are crossed at an altitude of four thousand feet and from the beginning descent we are in a wonderful garden of luxuriant vegetation, all artificial, all due to the labor of man and the beneficent effects of irrigation. Acres of walnuts, olives, apricots, grapes and oranges are passed in such profusion that one almost tires of the never ending vista. Here is the magnet which yearly draws the thousands of tourists from the East, but all of these marvels have been so often described by more competent pens than mine that I forbear.

California is in an orgie of spending and a whirlwind of crime. There is no limit in buying, the stores are crowded with purchasers, prices are exorbitant but do not seem to check expenditures. These stores are the last word in equipment and the rents are excessive. The streets of Los Angeles are so crowded that traffic is difficult, and everybody is well dressed and happy.

Murders, thefts, divorces, defalcations, fill the pages of its newspapers. Reckless automobileists speed through the streets at a thirty mile clip and pedestrians fall over one another in a mad effort to escape mutilation or death. Thefts of cars average eight a day in Los Angeles alone and the accidents are daily in two figures. This city, grown greatly since my last visit eight years ago, is now in population sixth in the United States and claims a population of seven hundred thousand and a tourist increment of over a hundred thousand.

Everything is on a gorgeous scale and nowhere more marked than in its theatres which rival any I have ever seen. Movies of course predominate, as this is the home of the movie industry, and there are but two restricted to legitimate drama.

One theatre in particular is a magnificent

building with spacious lobbies, parlors and an imposing auditorium seating three thousand, and besides the film features there are given spectacular productions, excellent vocal music and more than excellent music by an orchestra of fifty, and all for eleven cents.

Movie stars are in great evidence but entrance to the parks where actual scenes are being enacted is difficult. Fortunately one day we were in Seligs Zoo park and stumbled on to a film in making, which has already been eight months in preparation. Wild animals, trained baboons, wild men and a beautiful heroine were all in evidence and we were enabled to see them shoot several scenes but when we tried to get out we were up against a barred gate, marked, No admittance.

"How did you get in there?" the attendant asked, as he let us out. "No one is allowed in here for any price," but we had been in, so it didn't worry us. I carried a cane that day and I think he thought I was going to buy the park. I notice I get more attention from hotel clerks and bell hops when I carry a cane.

Speaking of hotels. Don't come to California unless you have hotel reservations. Hundreds are turned away daily. Apartments, and there are hundreds of them, are filled to overflowing.

When you can get a room you are only partially cared for. It is necessary occasionally to eat and the cafeterias and restaurants are so crowded that you usually finish mastication when you come out.

Fruit is everywhere and often you can buy oranges for seventy cents a dozen which would cost at home fifty and are almost as good. We do get, however, pomegranates, persimmons, fresh olives and figs which you cannot get at home for any price.

You can get apples for fifteen cents and near beer for thirty.

I had planned to give a little lecture on irrigation from a fund of knowledge I acquired in a visit to Pepper Knoll ranch, once a desert now a blossoming garden and owned by a former Providence patient, but I fear it will be delayed in transmission, together with impressions of Catalina, Santa Barbara etc. F. T. R.

Catalina Island, January 3, 1920.

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EDITORIALS

THE WORKMAN'S COMPENSATION ACT.

The Workman's Compensation Act, as at present administered, has certain glaring defects which expose it to merited criticism in so far as the workman himself or his heirs are concerned. If it is the intent of the framers of the Act to make possible the payment of just compensation for death or disability incurred in the course of employment, then obviously, willing the end, the legislators should provide some definitive means

of attaining it. This, in some cases they have not done.

For example, a man is injured or is killed or dies while at work. The question may or does arise as to the status of himself or of his heirs under the Compensation Act. The employer, usually through his agents, denies any liability under the Act. The dispute is not or cannot be settled without adjudication in a court of law, and just here is the unsatisfactory situation to which we have referred. If the Court is to administer justice as between the contending parties, it is plain that the *whole* of the facts and

the inferences or opinions based upon those facts should be brought to the cognizance of the Court. For in no other way can the Court render a just decision on the evidence.

Now as things are at present, it is many times difficult, or it may be even impossible for the workman to have his case adequately presented in Court unless there are in the community men, doctors and lawyers, who are willing to accept a contingent fee for their services, which means, in the event of an adverse decision, no fee at all. And adverse decisions, as every one knows, are not infrequent. The practical outcome of this state of affairs is this,—that were it not for the perennial good-will and good-nature of medical men and lawyers the workman's case would be badly off indeed. And why? Because the employer or his agents have the money to hire whom they please and as many as they please for the presentation of his case before the Court. The very fact that the dispute is in Court at all implies arguable propositions with respect of it, and how is the Court to adjudicate justly unless, as we said before and reiterate, he has the whole of the evidence before him? It so happens that under the present arrangement it is the workman who suffers most often, but that is merely accidental, for in principle, things would be just as bad were it the employer who could not get his case adequately presented to the Court.

Someone may say that we exaggerate the difficulty because as a matter of fact workmen do get their claims set out in Court. We grant it and that is precisely our point; for this is due, not to any virtue or grace in the Workman's Compensation Act, but to the circumstances that some members of the community are willing to give gratuitous services in a cause for which properly they should be recompensed. It seems strange thus to make the ends of justice depend upon what is, in effect, charity. If the Workman's Compensation Act means to compensate the workman,—and who can doubt that it does?—then certainly it is not too much to ask that it provide the machinery for making that compensation, not in some cases merely, but in all.

Another point to observe is that any employer or his agents may terminate the payment of compensation for reasons that appear to him sufficient. And what is the effect of this? If

the workman refuses to consent to such deprivation he must bring his case into Court and then again we have a similar condition of affairs to that which obtains when the employer refuses any compensation at all. It would seem that there ought to be some other way of settling such disputes than the one at present in vogue. In these days of efficiency it is rather cumbersome, not to say absurd, to have three or four lawyers and a half a dozen doctors contending for days over the settlement of a case which two men of good-will could adjust amicably in as many hours. And when each side considers it advisable to have experts numerically equal, then is created a situation as unnecessary in principle as in practice it is expensive.

LEST WE FORGET.

On last Armistice Day the physicians of Rhode Island who were not in military service gave a complimentary dinner to the ex-service men. It was a graceful and well-merited expression of the honor due to those physicians who, at great personal sacrifice, had given up practice, comforts of home and comparative ease to answer the call of the Nation, and so far as it went, it was a good thing. But after "the tumult and the shouting dies," is there not still a duty we owe these men, which should be paid in something more substantial than a banquet and well-turned phrases and encomiums? With the quiet unselfishness these men showed in giving up civil life, many of them on returning have uncomplainingly turned to the difficult task of again building up their life's business, but with an almost disheartening slowness and meagre financial return. We hear much about rehabilitation of the ex-service men, of jobs for returned soldiers, but not a word about helping the ex-medical officer rehabilitate himself, whose sacrifice was certainly greater than that of most classes of men who entered military service from civil life. Of course, it is manifestly impossible for any organized effort to be put on foot looking to the aid of these men, but each of us as individuals can help in his own way in his own circle. The specialist doing operative work can help these young men by asking them to assist at operations or etherize, and the general practitioner who stayed at home should endeavor to remem-

ber that the specialist to whom before the war he was wont to refer his difficult cases, has returned, and to resume so far as he is able his former relations with him. As was pointed out by one of the speakers at the Armistice Day dinner, "Never in the history of Providence has the sick rate been so low as at this time when the medical men returned from service to take up private practice again." If practice is quiet for the men who have been "on the job" all the time, the silence which surrounds the ex-service medical man must be almost palpable. Don't try to satisfy your conscience with "three long cheers for the noble hero," but remember he is back at work and that he is in many instances having a tremendously hard, up-hill fight of it, and anything that we can do to help him gather up the loose and tangled threads of his professional life, let us do cheerfully and thankfully as a debt and a big one, too.

J. W. L.

THE HOSPITAL AS A RESEARCH INSTITUTION.

The hospital which neglects to provide for the research side of medicine is not only failing in its duty to the public, which provides the financial sinews on which it thrives, but it is also paving the way for a decline in its usefulness and eventually in its reputation. The position of resident physicians, who as men of special training, shall serve as directors of the pathological laboratory, of the X-ray department, or even of various services in the hospital, is fast coming into vogue in the larger hospitals in this country. The best type of men will not be attracted to such positions, since the emoluments are far below what obtains in private practice, unless they are given the opportunity to carry on scientific research unhindered by hospital officials. It is a short-sighted policy which seeks to interfere with this type of investigation. The study of the many vexing problems which still remain to be solved, usually results in the discovery of a treatment which shortens the patient's residence in the hospital. Long-drawn-out treatment is the greatest source of expense to any hospital having a large proportion of free patients. Incidentally, a simpler and less expensive method is often devised. In this way the hospital and the patient are both benefited.

PHYSICIANS AND LEGISLATION.

At every session of the State Legislature there are presented several bills that either directly or indirectly affect the medical profession. How many physicians take enough interest even to find out the purport of these bills? Unfortunately their number is very limited. If our medical practice act is faulty—if our milk laws are very inadequate—if our laws governing general health are not as wide-reaching as they should be—on whom should the blame rest? Surely not on the public, because the public looks to the medical profession for enlightenment and expects the profession to be interested in its own affairs. Not entirely on the legislators, for they, too, look to the medical profession not always for enlightenment, but generally to determine whether the doctors are interested in any particular measure. The legislators know that if the medical profession of the State is united either in favor or in opposition to a certain bill, they must take cognizance of that fact and govern themselves accordingly. The effect of a united profession was well shown when an attempt was made to reorganize the State Board of Health.

The greatest part of the blame seems, therefore, to rest on ourselves individually and as a profession. All physicians are given a larger responsibility than simply caring for their private practices. Many take these responsibilities seriously and render valiant service to the town, city, state or nation. Many others do not realize that they are members of a profession of which much is expected. It behooves us, therefore, as individuals and as members of our various societies to be interested in the bills presented during the legislative session pertaining to our profession. Also we should see to it that the legislative committees of the various societies are appointed for their fitness and not for the honor—that is—that they be committees in deed as well as in word. By doing this not only will we be protecting the public and the profession, but also we will help our legislators from committing unnecessary blunders.

OSLER.

The death of Sir William Osler is the final event in the career of Canada's most illustrious son, America's well beloved teacher and physi-

cian and the friend, adviser and helper of all who labored with him in the field of medicine. Of his achievements as investigator, teacher, practitioner and writer, the world does not need to be told. Yet many a man in the ranks of the profession has been his equal, perhaps his superior, in the fields of research, teaching and practice, and a few have possessed equal literary ability. But in one thing Osler was supreme, in broad and generous humanity—and on this pedestal rests his greatness. In talking with those who were Osler's intimate acquaintances in the days before his rise to fame, one hears from them all of his constant endeavor to "help the other fellow." The same interest in the efforts and endeavors of others was throughout his life his most striking characteristic. A cardinal rule of his conduct appears to have been this: First find out what the other fellow is driving at and then see how you can help him. This spirit made him universally successful, kept him ever out of jealousies and factional bickerings, and did more to ensure his constant advancement than all the achievements of his intellect. We in Rhode Island recognize in his death the passing of a comrade to whom we owe that sort of debt which can never be paid.

SOCIETY MEETINGS

PROVIDENCE MEDICAL ASSOCIATION.

November 3, 1919.

The regular monthly meeting of the Providence Medical Association was called to order in the Medical Library by the President November 3, 1919, at 9:05 p. m.

The records of the previous meeting were read and approved.

The applications for membership of Drs. Joseph E. Raia and Joseph L. Dowling were read and referred to the Standing Committee.

Dr. C. H. Leonard, for the committee, read the resolutions and memorial on the death of Dr. George Dallas Hersey, followed by a motion by Dr. W. R. White, seconded by Dr. W. J. Burge, the other member of the committee, that the report be incorporated in the records and a copy sent to the widow.

The motion was passed, and the report follows:

In Memoriam.

GEORGE DALLAS HERSEY, M. D.

"To Dr. Hersey far more than to any other man the Rhode Island Medical Society is indebted for its excellent library. It was his hobby and for many years he devoted to its accumulation untiring energy and much time that he could ill afford to snatch from the practice of his profession.

"As the funds available were extremely modest he deemed it best to make it a library of journals, rather than text-books. It was a wise decision. In such a library the busy practitioner can find the very latest article of which he is in search, while he whose task is to prepare a comprehensive paper can here find a wealth of original material.

"The Library is Doctor Hersey's best monument."

George Dallas Hersey, M. D., the eldest of the five sons of David and Eliza Fitch (Mills) Hersey, born in Foxboro, Mass., August 12, 1847; died in Summerville, S. C., September 28, 1919.

He was a descendant in the ninth generation from William Hersey, who came from England and settled in Hingham, in the Colony of Massachusetts, in 1635.

He prepared for college at the "English and Classical School" in Foxboro. At Brown University he won an appointment to the Phi Beta Kappa Society, was graduated Bachelor of Arts in 1869, and received the degree of Master of Arts in 1872.

He was principal of a private high school in Westerly from the autumn of 1869 until, a year later, that school was merged in the public school system, and he continued as teacher for two years longer. In the meantime he began the study of medicine under Dr. William H. Wilbur of Westerly as preceptor.

He received the degree of Doctor of Medicine from the University of the City of New York in 1874.

For the ensuing year he was surgical interne in Hartford Hospital, Hartford, Conn. In the spring of 1875 he settled in practice as physician and surgeon in the city of Providence, and continued there for the nearly forty years of his active professional life.

At the annual meeting in June, 1875, he was elected a Fellow of the Rhode Island Medical Society, and in September, 1875, he was elected to membership in Providence Medical Association, the rule then being that to be eligible to membership in the city association the applicant must be a Fellow of the State society.

In those days interest in the Association was at a low ebb, and meetings were poorly attended; e. g., for the three successive months, November and December, 1874, and January, 1875, the record for each was "no quorum" at the regularly appointed time for the meeting. But Dr. Hersey appears to have been a faithful attendant, for he was repeatedly appointed secretary pro tem., and he was duly elected secretary of the association for the year 1880-1881. It should be added that his records, as secretary of the Association, and, later, again as secretary of the State Society, are models of accuracy and completeness.

It has been a surprise to find that, prominent as he was in the profession and in the work of the Association, he was never elected to the presidency of the Association. Perhaps the reason for it was that, from 1877, when a few physicians in Providence were making an effort to establish the "nucleus of a library" in the Rhode Island Medical Society, he enlisted so heartily in that project that thenceforward it became his life's ambition to carry it to a successful accomplishment.

At the Annual Meeting of the Society in 1879 he was elected to membership in the first "standing committee on the Library." He was re-elected to the committee year after year, even to 1914, which was after he had left the state. Upon the organization of the Committee on the Library he was appointed Librarian, and from 1879 to 1912 served without pay in that capacity with noteworthy efficiency.

When the plan of forming a library was laid before the Society in December, 1878, by the special committee (Charles O'Leary, Timothy Newell and Edwin M. Snow), to whom the matter had been referred, it was reported that the Secretary had in his hands "one hundred and thirty volumes, consisting principally of exchanges from other societies." Due to the inextinguishable zeal and persistent endeavor of

the librarian in gathering collections for it, and in arranging them in orderly manner in the new building of the Society, the Library of the Rhode Island Medical Society in 1912 had become one of the largest medical libraries in the United States.

And in the well-weighed words of an honored fellow of the Society, which have already been quoted, The Library is Dr. Hersey's best monument."

Dr. Hersey was Secretary of the Society for the six years, 1881-1887; President for the two years, 1899-1901; and from 1881 to 1911 he edited the annual issues of the Transactions of the Society with painstaking devotion and scholarly accuracy.

He was also from 1900 to 1910 the editor, and from then to March, 1913, one of the Board of Editors of the PROVIDENCE MEDICAL JOURNAL. Through nearly the entire duration of his life as a physician in Providence, Doctor Hersey was on the medical staff of Rhode Island Hospital: From October, 1878, until January, 1888, as Surgeon to the Outpatient Department. On October 2, 1887, he was elected Visiting Surgeon and served as such until his resignation, because of the age limit rule, in September, 1908, and then was appointed Consulting Surgeon.

He was the visiting physician to Dexter Asylum, in Providence, from June, 1879, to March, 1885, and consulting physician thereafter for several years. He was also physician to St. Elizabeth's Home, and to the Day Nurseries maintained by Grace Episcopal Church,—in all doing a vast amount of charitable work.

Doctor Hersey was elected a Fellow of the American Academy of Medicine in 1880 and continued in active membership to the end of his life.

He was a member of the American Academy for the Advancement of Science and a member of the Society of Medical Librarians.

He also had been a member of the Rhode Island Historical Society, and of the Congregational Club of Rhode Island.

From 1878 he was a member of Beneficent Congregational Church in Providence.

Early in January, 1913, Doctor Hersey was prostrated by a cerebral hemorrhage from the effects of which he so far recovered that in the

autumn he removed to Charleston, S. C., where his daughter resided, and in September, 1918, removed again to Summerville, S. C.

Though enfeebled in body, Doctor Hersey retained his mental faculties in a remarkable degree to the very last.

He had always been interested in the history of the medical profession in Rhode Island and collaborated in editing a History of the Physicians in the United States previous to 1800 by contributing biographies of those in Rhode Island, and quite naturally he accumulated much information concerning physicians of a later day who became Fellows of the Rhode Island Medical Society.

Accordingly, while living in Charlestown, he was urged to prepare a series of sketches of past Fellows of the Society, but he preferred to give himself to the work of gathering data for a Historical Catalogue of the Fellows and the Honorary Members of the Society from its organization in 1812.

In recognition of this he was officially appointed Historian of the Rhode Island Medical Society at the recent annual meeting.

His work in preparation of the Catalogue was well advanced, and he hoped to complete it in the early autumn.

But though during the six years of his illness he had rallied from several recurrences of the cerebral hemorrhage, each attack had left him more feeble than before, and the heat of the summer had been prostrating. He was stricken again on the twenty-sixth of September, and died as has been stated two days later, at Summerville, now the residence of his daughter.

The burial was at Foxboro, Mass., on October first. The circumstances were such that there could be no appointment made for a public ceremony.

Doctor Hersey is survived by his wife, Helen Gertrude, the daughter of David and Elizabeth (Stillman) Smith, of Westerly, to whom he was married October 12, 1877; by his daughter, Helen Elizabeth, who is the wife of Leonard A. Prouty, of Summerville, S. C.; and by his son, William Read Hersey, whose residence is in New York City.

The first paper of the evening, "Child Welfare Yesterday and Today," by Dr. Elizabeth M. Gardiner, Director of Division, Child Wel-

fare, Rhode Island State Board of Health, was read by Dr. Gardiner and was discussed by Dr. Jay Perkins and Dr. Harry W. Kimball.

The second paper, "The Need of Mental Hygiene in Rhode Island," was read by Dr. A. H. Ruggles, President of Rhode Island Mental Hygiene Society, and was discussed by Dr. C. A. McDonald and Dr. J. W. Keefe, the discussion being closed by Dr. Ruggles.

Reports of committees. Dr. Hyman Chester reported a case of zinc chloride poisoning, and Dr. Calef presented a specimen, with X-ray pictures, of a monstrosity consisting of twin children joined by a single head.

Dr. W. R. White commended the President's practice of using local talent for the meetings, seconded by Dr. Burge.

There being no further business, Dr. Burge moved that "we do now adjourn," and the meeting closed at 10:45 p. m.

Forty-four members and two guests attended. A collation was served.

R. G. BUGBEE, *Secretary*.

PROVIDENCE MEDICAL ASSOCIATION.

December 1, 1919.

The Providence Medical Association met in joint session with the Providence Society of Anesthetists at the Rhode Island Medical Library, December 1, 1919, Vice-President Dennett L. Richardson presiding in the absence of the President. The meeting was called to order at 8:55 p. m. The records of the previous meeting were read and approved.

A letter of thanks for the memorial to Dr. G. D. Hersey from his daughter, Mrs. J. L. Prouty, was read and placed on file.

The report of the Standing Committee, recommending for membership Dr. J. L. Raia and Dr. J. E. Dowling, was presented, and a motion made and seconded that the by-laws be suspended and the Secretary instructed to cast a ballot for the election of these candidates. The motion was passed and the ballot cast.

The Standing Committee presented the following names for officers and committees for 1920:

For President—Dennett L. Richardson, M. D.
For Vice-President—Frank T. Fulton, M. D.
For Secretary—Raymond G. Bugbee, M. D.
For Treasurer—Charles F. Deacon, M. D.

For member of the Standing Committee for five years—Harry W. Kimball, M. D.

For Trustee of the Rhode Island Medical Library Building for one year—J. T. Farrell, M. D.

For Reading Room Committee—George S. Mathews, M. D.; M. B. Milan, M. D.; Henry A. Cooke, M. D.

For delegates to the House of Delegates of Rhode Island Medical Society—A. D. Rose, M. D.; George R. Barden, M. D.; William H. Magill, M. D.; Edward S. Brackett, M. D.; William Hindle, M. D.; Albert H. Miller, M. D.; Frederick N. Brown, M. D.; H. G. Calder, M. D.; J. B. McKenna, M. D.; F. G. Phillips, M. D.; George T. Spicer, M. D.; C. A. Macdonald, M. D.; J. P. Cooney, M. D.; W. A. Risk, M. D.; George A. Matteson, M. D.

A motion by Dr. H. G. Partridge, seconded by Dr. C. G. Skelton, appropriating \$300 to the Rhode Island Medical Society for the use of the Medical Library for 1919 was passed.

By the consent of the meeting the order of business was changed so that Dr. Arthur Hollingworth could present a history and photographs of a case of pyloric stenosis in an infant relieved by operation.

There being no further business, the chair invited Dr. C. O. Cooke, President of the Providence Society of Anesthetists, to take charge of the meeting.

Dr. Cooke introduced the speaker of the evening, Dr. James T. Gwathmey of New York, who read a very interesting and instructive paper on "The Anesthetic Problem in Lung Surgery."

Dr. Gwathmey's unusual experience as laboratory investigator, administrator of anesthetics, and worker with the Medical Corps of the U. S. Army in France, enabled him to view the subject from many angles, and led to his conclusions that preliminary morphine together with gas oxygen administered with a proper amount of pressure is the safest and most satisfactory anesthetic in operations upon the lung.

The discussion was opened by Dr. Frank L. Richardson of Boston, who agreed in general with the speaker's conclusions, although his war experience had been limited to the intratracheal administration of ether in these cases.

Dr. P. E. Truesdale of Fall River next dis-

cussed the paper, emphasizing the point that from his observations in the French Base Hospitals preliminary morphine was not necessary, and in the presence of active bleeding without a definitely determined plan of action, might obscure the patient's real condition, and be positively dangerous, also that the French surgeons were able to do all their operations on the lungs with good results under straight ether administered by the drop method.

The discussion was continued by Dr. Albert H. Miller, Dr. John W. Keefe and Dr. W. B. Cutts.

Dr. Gwathmey closed the discussion, answering numerous points brought up during the discussions.

Dr. Richardson again took the chair and called for further business.

Dr. White entertained with one of his original rhymes, ending with a motion to adjourn, and a rising vote of thanks to the speakers. This was given, and the meeting adjourned to the basement for the collation at 10:45 p. m.

One hundred and two members and fourteen guests attended.

WASHINGTON COUNTY MEDICAL SOCIETY.

Annual meeting of Washington County Medical Society was held at the Colonial Club, Westerly, Thursday morning, January 8, 1920, with a fair membership present.

The Treasurer's report showed the society in a healthy condition financially.

Officers for the ensuing year were elected as follows:

President—P. J. Manning, Wickford.

First Vice President—H. L. Johnson, Westerly.

Second Vice President—W. T. Veal, Stonington, Conn.

Secretary and Treasurer—W. A. Hillard, Westerly.

Auditor—S. C. Webster, Westerly.

Censor for three years—E. E. Kenyon, Usquepaugh.

Delegate to the R. I. Medical Society for two years—Harold Metcalf, Wickford.

Councilor to the R. I. Medical Society for two years—F. I. Payne, Westerly.

Dr. Champlin, Chairman of the Committee on Hospitals, made a verbal report denoting prog-

ress. The report was received and the committee continued.

Voted—That the members of this Society shall not treat patients in any community of Washington County for which a local fee-bill has been established without charging at least the minimum rate adopted for that community.

Dr. John W. Keefe, of Providence, read a very interesting and instructive paper on "Prostatic Disease" which was generally discussed.

Adjourned and dined.

W. A. HILLARD, M. D. *Secretary.*

HOSPITALS

RHODE ISLAND HOSPITAL.

The regular quarterly meeting of the Staff Association was held at the Hospital, Monday, January 12, at 8:45 p. m. Routine business was transacted.

NORMAN C. BAKER, M. D., *Secretary.*

ST. JOSEPH'S HOSPITAL.

The annual dinner of the St. Joseph's Staff Association was held at the University Club, Providence, January 7, 1920. An excellent dinner was served, during which musical selections were rendered by an orchestra. The President of the Staff Association, Dr. William Hindle, introduced the Toastmaster, Dr. William R. McGuirk, who presided during the post-prandial exercises. The speakers were Rev. Mgr. Peter E. Blessing, D. D., who brought the greetings of the hospital corporation, and voiced the appreciation of the work of the staff. He was followed by John J. Fitzgerald, Esq., of Pawtucket, in a humorous vein. The concluding speaker, Albert B. West, urged a return to the ideals of an earlier American civilization, as set forth in the Second Inaugural address of President Lincoln. Approximately sixty members and guests were present.

MEMORIAL HOSPITAL.

The annual meeting of the Staff Association of the Memorial Hospital was held, December 17, 1919. Dr. Arthur T. Jones, President, presided. There were present Drs. Duffee, French, Jones, Oulton, Wheaton, Chase, Donley, Keefe, Holt, Towle, Kerney, Hammond, Appleton, Porter, Gerber, Remington, Hussey, Miller, Harris, Kenney, Sporn and Mr. Frederic W. Easton.

The records of the last meeting were read and accepted and after a short talk by the President, new officers for year of 1920 were elected as follows:

President—Dr. J. H. Remington.

Vice President—Dr. C. H. Holt.

Secretary—Dr. J. F. Kenney.

Treasurer—Dr. Lamert Oulton.

The question of adjustment of cases coming in under the Workmen's Compensation Act was discussed and Dr. Frederic V. Hussey moved that the chair appoint three members from the staff to consult with the Trustees as to the adjustment of such cases. The motion was made and passed and Drs. Hussey, Jones and Hammond were appointed as the committee.

Dr. Albert Miller reported on the A. M. A. drive for Clinics to be held at all the hospitals on certain days. Dr. Miller moved that a committee of three be appointed by the chair to consult with the State Committee. The motion was made and passed and Drs. Miller, Hussey and Duffee were appointed as the committee.

Dr. William Jason Mixter of Boston was the speaker of the evening and he gave a very interesting talk on "Fractures of the Spine." He gave results of cases in war and in private practice. His paper was discussed by Drs. Hussey, Donley, Hammond, Gerber and Appleton.

Meeting adjourned. Collation served.

JOHN F. KENNEY, M. D., *Secretary.*

ORIGINAL POEM.*

By WILLIAM R. WHITE, M. D.,
Providence, R. I.

Although these hours have been well spent,
Without a doubt, I'm glad
For the speakers have all spoken well
In telling things they had to tell.
Discussion too was rather free,
Or so at least it seemed to me,
And that is the way it ought to be.
In anesthesia and such
And right well it is known to me and you
That to our guests our thanks are due.
We trust to them it is fully clear
That we are right glad to have them here.
But now the scientific stuff

* Read before the Providence Medical Association, December 1, 1919.

I say, by Jinks! we've had enough.
 A lunch is served right off down stairs
 For hungry dogs to eat like bears.
 There may be a sandwich, bread, or cake,
 But of these each one his choice will make.
 Whatever tempts you, and what specialty you
 please,
 From a doughnut to a tiny bit of cheese.
 And furthermore we're pretty sure
 There's coffee hot, both strong and pure.
 May joy be yours, and it is no joke,
 There will be cigars that you can smoke.
 But sad to say, I greatly fear
 That you will find ne'er a keg of beer.
 Perhaps you'll frown and say at first
 That nothing else will quench your thirst.
 But I say this, my words excuse,
 Beer is not food, but simply booze.
 And if too much of it you drink
 It surely will mix the thoughts you think.
 Listen now, and have a heart,
 Jump aboard the water cart.
 It will do you good and life prolong.
 Go to it youth. So long! So long!
 For three score years it takes to know
 Our meetings lively to adjourn,
 And surely I must not presume
 Another's function to assume
 To move adjournment if he were present.
 My humble motion do not scorn,
 It is that we do now adjourn.

THE LIBRARY TABLE.

MENDERS OF THE MAIMED. By Arthur Keith, M. D. Oxford University Press. 1919. Pp. 327.

Anything from the pen of Professor Keith is sure to contain matter of interest set forth in his characteristically lucid English. Into this book he has gathered a score of lectures given at the Royal College of Surgeons of England in the winter of 1917-1918 on "The Anatomical and Physiological Principles underlying the Treatment of Injuries to Muscles, Nerves, Bones and Joints." The result is a fascinating account of the principles which govern the art of orthopaedic surgery. He has accomplished his task in a way which is not only new but distinctly novel. The hospital wards, the physiological laboratories, the dissecting rooms and private

workshops in which the great advances of orthopaedic surgery were made, are shown to us and we are there introduced to the "Menders of the Maimed" as they were in the heyday of life. We meet Hunter, Hilton, Thomas, Marshall, Hall, Duchenne, Syme, Sayre, Goodsir, and others of the pioneers who laid the foundations of our present practice; and we learn that while the surgical problems presented by the war were new in extent, they were not new in kind. The doubts which were revived were old; the questions which urgently demanded an answer were of ancient times. What is the rightful place of rest, action, massage, bone-setting, sprain-rubbing, manipulative surgery, electricity, heat, cold, counter-irritation in our armamentarium? What can operative measures do—grafting, suturing, transplantation? Is the periosteum capable of forming bone? For these and many other problems, Professor Keith has sought to provide the materials on which the right answers must be based in the pages of this most instructive and readable volume.

J. WILLIAM WHITE, M. D. A BIOGRAPHY.
 By Agnes Repplier. Houghton-Mifflin Company, Boston. 1919. Pp. 276.

All Pennsylvania men certainly and doubtless many others will be glad to have this biography of the redoubtable Philadelphia surgeon. Those of us who knew him in the flesh can recall him vividly as we read of his career and his exploits in Miss Repplier's story of his life. It is obvious that admiration, sympathy and friendship have dictated to her pen; and though there is less of White as a teacher of surgery than we could have wished, still on the whole the portrayal of his character and achievements is adequate. His relations with Agassiz during the voyage of the "Hassler" in the South Atlantic, his fistic encounters with various people when he was assistant to Dr. Agnew, his enthusiastic interest in and support of university athletics, his friendship with Treves, and his patriotic services in the Great War, are all described with many touches of intimate detail. Miss Repplier's story of the life of her friend is altogether worthy of the fine gentleman who inspired it.

HEALTH, THROUGH WILL POWER. By James J. Walsh, M. D. Little, Brown & Co. Boston, 1919. Pp. 284.

After the recent aberrations of Freudism, it is a genuine pleasure to open a book like this which is intended for popular reading. According to Dr. Walsh, we are not a mere bundle of repressions, complexes, symbolisms, and subconscious somethings-or-other: we really have a lot to do with the way things go on in our lives. At the centre of our personality is the will, to the training of which we should devote a considerable amount of attention. Like all physicians, Dr. Walsh is a firm believer in and advocate of the doctrines of Professor James, as set forth particularly in that remarkable essay on "The Energies of Men." We can all do more and better than we are for the most part accustomed to do. Our modern education in softness needs modification, and if we are ever to amount to much we must cease demanding that we be always comfortable. Following some general remarks on the nature of the will, there are excellent chapters on such topics as self-pity, pain and the will; the will to eat; the will in tuberculosis, pneumonia, coughs and colds, the will in affections of the heart and intestines; the will in the psychoneuroses. The author has much good advice to give and fortifies his remarks with many quotations from a very experienced psychologist, William Shakespeare. While the usefulness of the average popular medical book is more than doubtful, this is an exception and can be commended to those who are, so to say, wilfully sick.

GALEN ON THE NATURAL FACULTIES. Translated by Arthur John Brock, M. D. G. P. Putnam's Sons, New York. 1916. Pp. 331.

The dispraise of Galen and of everything that appealed to mediaeval men by the scholars of the Renaissance, has prejudiced the judgment of succeeding generations concerning one of the masters of medicine, for Claudio Galen was a very great man. His encyclopaedic mind embraced the whole of medical knowledge before and during his lifetime, and were it not for him, physicians in the after-time would be very badly off indeed. Mediaeval physicians were not so foolish as the Renaissance humanists would have us believe; in truth, they were in some ways wiser than their detractors, and there must have been something about the teaching of Galen that enabled him to rule medical thought for a thousand years. "Hippocrates," says Galen, "was

the first known to us of all who have been both physicians and philosophers, in that he was the first to recognize what nature does." Here is struck the keynote of the teaching of both Hippocrates and Galen; and this is shown in the volume before us which deals with "the natural faculties," that is, with the faculties of this same "Nature" or vital principle referred to in the quotation. If Galen be looked on as a crystallization of Greek medicine, then this book may be looked on as a crystallization of Galen. In no better way can we orient ourselves in the medical thought of the ancients than by reading it. We shall also gain many a point of view which modern medicine would do well to stress. An introduction by the translator adds to the value of the book, while the text itself is a worthy companion of the Latin translation by Linacre and the French rendering by Daremberg.

J. E. D.

MISCELLANEOUS

LETTER FROM CO-OPERATIVE MEDICAL ADVERTISING BUREAU,
CHICAGO.

The "RHODE ISLAND MEDICAL JOURNAL" was suspended in 1918 because the publishers were called abroad in the Service. They have now returned, and this State Journal will resume publication with the January issue, with Dr. W. A. Risk, 219 Waterman St., Providence, as Manager. Our new rate card for 1920 contains the RHODE ISLAND MEDICAL JOURNAL. The Bureau will represent this State Journal, and we know that publishers of other State Medical Journals will welcome the RHODE ISLAND MEDICAL JOURNAL back again in the publication field. It is hoped that the new business conditions will prove helpful in giving Rhode Island physicians a successful Journal. It goes without saying that the publishers will have the hearty co-operation of the Bureau, and the best wishes of other publishers.

The Bureau starts the new year with twenty-eight State Medical Journals, representing thirty-seven different States. The year 1919, with labor strikes and other difficulties, made it hard for some of the publishers to print their Journals, especially to get them out on time. In nearly every case, the difficulties have now been

remedied, and there is good reason to believe that, beginning with January, the State Journals will be printed under nearly normal conditions.

The Bureau has sent out hundreds of new rate cards advising advertisers about the new rates which become effective January 1, 1920. The publishers of several State Journals have sent us their rate cards containing the new rates, and we believe everything is in ship-shape to put the new rates into effect January 1.

General advertisers understand the necessity for the increase of rates, and when each publisher in agreement with the Bureau, is requiring the increase in rates, advertisers will know the advance is being uniformly made, and will be disposed to acquiesce in it.

December 1, 1919, was the Sixth Anniversary of the Bureau. From letters received from publishers and editors of State Journals, we have reason to believe the Bureau has helped to solve their problem of securing national advertising. We hope the Bureau may be increasingly valuable to you in the year 1920. In this closing message for 1919, we extend to the editors a Merry Christmas and Happy New Year.

CO-OPERATIVE MEDICAL ADV. BUREAU.

CARNEGIE FUND FOR RESEARCH.

The Carnegie Corporation of New York has announced its purpose to give \$5,000,000 for the use of the National Academy of Science and the National Research Council. It is understood that a portion of the money will be used to erect in Washington a home of suitable architectural dignity for the two beneficiary organizations.

The remainder will be placed in the hands of the Academy, which enjoys a federal charter, to be used as a permanent endowment for the National Research Council. This impressive gift is a fitting supplement to Mr. Carnegie's great contributions to science and industry.

The Council is a democratic organization based upon some forty of the great scientific and engineering societies of the country, which elect delegates to its constituent Divisions. It is not supported or controlled by the government, differing in this respect from other similar organizations established since the beginning of the war in England, Italy, Japan, Canada, and Australia. It intends, if possible to achieve in a democracy and by democratic methods the great scientific results which the Germans achieved by autocratic methods in an autocracy while avoiding the obnoxious features of the autocratic regime.

The Council was organized in 1916 as a measure of national preparedness and its efforts during the war were mostly confined to assisting the government in the solution of pressing war-time problems involving scientific investigation. Reorganized since the war on a peace-time footing, it is now attempting to stimulate and promote scientific research in agriculture, medicine, and industry, and in every field of pure science. The war afforded a convincing demonstration of the dependence of modern nations upon scientific achievement, and nothing is more certain than that the United States will ultimately fall behind in its competition with the other great peoples of the world unless there be persistent and energetic effort expended to foster scientific discovery.



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ORIGINAL ARTICLES

THE ANESTHETIC PROBLEM IN LUNG SURGERY.*

By JAMES T. GWATHMEY, M. D.,
New York, N. Y.

This paper is based upon between eighty and one hundred animal experiments performed in the Central Medical Department Laboratories, A. E. F., Dijon, France, and a large clinical experience with surgical teams working in the advanced zone of the American Army and confining themselves almost exclusively to chest surgery.

Both the anesthetic and the method to be employed were thoroughly tried out and finally decided upon before they were employed in the surgical work at the front.

The anesthetic agent to be employed in lung surgery should be one that, other things being equal, sustains the blood at the highest level consistent with good surgical anesthesia during the operation and with a minimum of reaction afterward. By process of elimination the choice lay between ether and nitrous oxide and oxygen, both of which were employed in the animal experiments. The final decision rested upon nitrous oxide and oxygen as the agent most nearly meeting the requirements.

The positive pressure method finally selected, after eliminating the endo-tracheal and endo-pharyngeal methods, involved the use of an air-tight mask (with a rubber bag reservoir, close to the mask, for the gases) placed upon the patient's face. A pressure of from five to twelve millimeters of mercury had already been determined upon as a result of the animal experiments. The positive pressure method used provides for: A. A constant supply of fresh gases; B. a constant

escape of some of the bases; C. a slight amount of re-breathing. The escape of the gases may be through an expiratory valve, although a valve is not absolutely essential, since the mask may be held in such a manner that a constant leakage occurs. No air can possibly enter the apparatus at any time when positive pressure is sustained. A slight positive pressure in addition to the gases is unquestionably an important factor in maintaining anesthesia. In addition to being an aid in maintaining anesthesia, positive pressure in lung surgery is a great aid to the surgeon, facilitating the examination of the lung, making the operation easier, eliminating the necessity for dangerous traction, giving satisfactory hemostasis, and obviating the need of undue haste.

The Army apparatus for administering nitrous oxide and oxygen is so simplified and so inexpensive that it may be universally used not only for lung surgery but for other operations as well.

It was found, from the animal experiments, that full surgical anesthesia that is safe without preliminary medication, is unsafe with this medication. For this reason the technic gradually merged from a deep to a light anesthesia, and finally to analgesia with unconsciousness. The high percentage of oxygen (15 to 35 per cent.) used, in connection with other obvious symptoms, would seem to prove that analgesia and not anesthesia is present. It occasionally happened, in the earlier work, that when too much oxygen was given, all physiological requirements were met and breathing ceased temporarily, for a half or three-quarters of a minute, the pulse continuing as before, and the patient having a pink color. This temporary cessation may be obviated by (1) decreasing the positive pressure momentarily, (2) allowing air to enter the mask, or (3) slightly increasing the amount of nitrous oxide. By using any one

*Abstract of a paper presented before a joint meeting of the Providence Medical Association and the Providence Society of Anesthetists, December 1, 1919.

of these methods the breathing will continue normally.

The technic employed in all chest cases calls for the administration of one-quarter, three-eights, or one-half grain of morphin, usually three-eights, hypodermatically, forty to sixty minutes before operation. Rapid or labored breathing, sometimes an important harmful factor in chest cases, is thus eliminated, and the patient comes to the table in the best possible condition. To begin with, just enough of the anesthetic agent is used to maintain analgesia, with the Army apparatus, two holes of oxygen and six of nitrous oxide. The mask is held tightly on the face, and the first three or four exhalations are allowed to escape through the expiratory valve, after which the valve is turned off, and part of each exhalation is allowed to escape between face mask and face. The rubber bag is filled to plus pressure. When the skin incision is made, if there is no movement or indication of pain, the oxygen is increased to three holes, the nitrous oxide remaining the same. The patient has a pink color, the lid reflex is active, the eye rolling, yet the muscles are well relaxed. From this time on any further increase in oxygen is determined by the condition of the patient. If the patient has been gassed or is still bleeding, equal proportions of the gases may be used, or, in some instances, 75 per cent. of oxygen and 25 per cent. of nitrous oxide, positive pressure being maintained in all instances. In every case full oxygen is given as the last stitches are inserted. The patient now has a very pink color, with pulse and respiration so nearly normal that his true condition may be almost entirely masked. He should be treated in every instance as a shocked patient,—a point which should be clearly emphasized.

This combination of the highest safe physiological dose of morphin, reinforced by nitrous oxide given with the highest possible percentage of oxygen, as stated above, with positive pressure, given in the easiest and simplest way, results in the safest and most satisfactory narcoisis available to-day for lung surgery. When the plan here outlined is followed, the patient rests quietly throughout, and rarely moves or utters a sound.

DISCUSSION OF DR. GWATHMEY'S PAPER.

DR. P. E. TRUESDALE, Fall River, Mass.—The first part of Dr. Gwathmey's reprint, down at the bottom of Page 3, says "that the surgeon should let the anesthetist alone." I feel that I should let the anesthetists alone in this discussion.

I agree that operations on the lung should be eliminated whenever possible. There are two classes of cases that must be considered whenever we talk about chest surgery. One is the type we see in civil practice, the chronic empyema, and the other type we saw in war—those suffering from hemorrhage, shock and perforation of the viscera.

In France I saw not a very large number but quite a good number of chest injuries. In the autumn of 1917 I had the good fortune to go on the French front to a French evacuation hospital. There were at that hospital three surgeons, Drs. B. Marquis, Pierre Duval and Hartman Cross, who did base operating there, so that the best men in France were operating at that hospital. Pierre Duval was doing chest surgery and Dr. Livesey, who went up there with me, told me after the first operation that my eyes stuck out one-half inch. I tell you that was a little experience, and I was thrilled to see a skillful war surgeon do an operation upon the lungs. He made his incision over the fourth rib whether the injury was in the back or front. He always went into the same place with his cautery, excising four or five inches of the rib, and with his French self-retained retractors opened the rib widely throughout the lung and searched for the foreign body, usually finding it; wiped out the chest cavity with ether and closed it up tight. He did that always in twenty minutes, if you happened in at that time you would see him when he had the lung in his hand. It is safe to say that the period of time elapsing from when he had first found and operated upon the lung was scarcely more than five minutes. There were two other surgeons in that hospital who occasionally did chest operations, Drs. Cross and Marquis. They were very skillful men but were very deliberate and took considerable time in chest operations. Neither one of them would finish an operation for the removal of a shell

fragment in the lung in less than an hour. Their mortality was between thirty and forty per cent.

In that drive in October Pierre Duval operated on fourteen cases and lost one patient. They remained there two weeks, and one patient died. In general his mortality was fifteen per cent., and when we realize that the mortality in chest cases in general was twenty-five per cent. in the advanced dressing stations and an average of twenty per cent. in the evacuation hospitals and ten per cent. in the mobile hospitals, making altogether a mortality of fifty-five per cent. of chest cases from the time they were picked up on the field until they reached home, you can see that Pierre Duval's mortality was below that of any other of the average surgeon who was doing chest surgery. He had the same anesthetist and always gave ether, never giving morphia or any other drug before the operation. I talked to him about the different anesthetics and about the administration of drugs before operations, and he said that on some cases the year before he had tried out the various methods and had come to the conclusion that it was safer not to give the patient morphia or any other drug before ether. An expert anesthetist gives the minimum amount of ether and he completes the operation in the minimum amount of time, and I believe that is the secret of his success.

These chest patients who were brought into the mobile hospitals were nearly all in a state of shock, and that shock might be due to the injury itself or to hemorrhage, and it was often times very difficult to discriminate; sometimes it was impossible. If it was due to shock and an operation was done, it made no difference whether he used gas oxygen or anything else. The patient died. But if the shock was due to hemorrhage that was continuing and you waited, the wounded man died, and if you operated in all probability you could save him, so that it was necessary to decide in the first place whether the wounded man was suffering from shock and whether the shock was due to hemorrhage that was continuing. If he had a sucking wound in the chest we knew that he was suffering from hemorrhage, and if we closed the sucking wound he would very probably get well because then the thoracic pressure would stop the hemorrhage

If a man was wounded by a bullet, which was usually a through and through wound with the orifice of entrance and exit closed and the site of the chest pretty well filled, we did not operate because we felt reasonably sure that ultimately the pressure and clotting that occurred in the chest would close it unless it happened to be in the upper part of the lung and in front; then the man could spit blood from the wound itself. If there was a considerable pressure against the heart on the left side, then operation was indicated just as if he had a sucking wound and the operation done to control bleeding. In all of these cases it required a finesse of judgment, and those of us who had the opportunity to see Pierre Duval had a real good start in introductory work on the chest.

You could not help seeing the place, which gave one the impression that after all ether was a pretty skillful form of anesthesia if administered properly and that morphia was a dangerous drug. If a man came in with a sucking wound and had a blood pressure of eighty, he had one-quarter grain of morphia given perhaps in the advanced dressing station, one-quarter of a grain of morphia given in the mobile hospital, and died quietly. If a man did not have morphia and was dying with hemorrhage, occasionally then perhaps we saved him because he did not have morphia. These were measures, of course, used in the war. If a man had received a bullet through the lung, or was struck in the chest and had a penetrating wound of the lung, and was taken to the hospital and given one-quarter of a grain of morphia at once, it was difficult to know what to do. Let alone, the surgeon can decide what it is best to do for him. On the other hand, if it is a case of empyema, we know that in the acute case, if we decide to operate, the quickest operation possible is to be done. If you could eliminate all influence of shock and anesthesia, this is unquestionably most desirable.

A good many surgeons, who have come home from France, have expressed their disappointment with the small amount of surgical knowledge we have obtained from war experiences. There have been comparatively few contributions that have been really instructive during the war. As a matter of fact, surgery had a little set-back because before war was declared

a great many pressing and immediate problems were being worked out which were abandoned, and now that the war is over it does not seem that the average man is as ready to dig for knowledge as he used to be. But when you consider that England was in the war four years, that French surgeons were in the war four years, and that the French surgeon, who was usually a lieutenant, but sometimes a captain, was usually allotted a matter of three hundred and fifty francs per month, and living in that way for four years, one can readily understand that the spirit of progress in the minds of these men is in the direction of more pay and shorter hours. It has reached the office, the operating room, and the lecture room just the same as it has gone into the factories, the railroads and the mines. There are mighty few fellows who want to go back on that slate. I feel to-night like congratulating Dr. Gwathmey for getting out of the war, not only with having done something really instructive, but with a spirit that will continue in this work of research with anesthetics.

I am not a pessimist in regard to what American surgeons will do in the laboratory and in the operating room, but I think perhaps that I feel like the German prisoner whom we had in our hospital. He was taken prisoner a few days after the eighty-ninth division went into the American front—General Wood's division. The first night they went in they had several thousand gas shells sent over them, and had between seven hundred and eight hundred casualties that night. About two divisions were left in support and a colored regiment was sent up to relieve these fellows who had been gassed. This German prisoner said, "The Americans are certainly a hard crowd to beat." "You know," he said, "we gassed those fellows all night until they were black in the face and they came over the top after us in the morning."

DR. ALBERT L. MILLER, Providence, R. I.—I think that this society is very fortunate in hearing anyone so well informed on the subject connected with anesthesia, and especially that connected with the chest. We all of us see lung surgery, sometimes with the same experience these men have had, and I think we have a lot of excellent experience in this line, too. And then again because Dr. Gwathmey from his tremendous experience has held to knowledge that

he has gained during the war, and has taught us a great deal of real value.

I am especially interested in what he had to say and what Dr. Truesdale has said about light anesthesia in these cases, because it has been generally supposed and is rather an abstract in the mind of the profession at the present time that shock is likely to occur under light anesthesia, and it is necessary to give either gas oxygen or ether in order that there may not be shock. Recently it has been proven that shock never occurs as the result of light anesthesia and that it is impossible to anesthetize a patient so lightly that as a result there may be shock, but rather that shock results from deep anesthesia. I think that it is especially noteworthy in Dr. Gwathmey's paper where his comparison of gas oxygen anesthesia and that which he uses as light anesthesia appears and with which he does not find shock.

There are some other features which should be outlined for the operation under anesthesia. I think that after we decide what anesthetic we should use that we ought to pay attention to the posture of the patient. There is a great deal of damage done in these cases, especially when the patient is placed in a sitting position or when rolled on to sound lungs. The operation performed in the sitting position tends to put the patient in a condition of shock, and if the patient is rolled over at all on to a sound lung he immediately has the dyspnea increased and considerable extra weight on the heart. In some cases these patients may have a dilatation of the heart result from the great stress that was put on it from this cause. I believe that it would be better if we should establish a principle and never put the patients under anesthesia in a position which they are not able to assume except with a considerable degree of comfort. I would like to ask Dr. Gwathmey his opinion of such cases.

I was interested in the gradual removal of positive pressure of permanent cases. It sometimes seems, after an operation of half an hour or so, that having this pressure removed at the end of the operation rather suddenly that the patient would lose a great deal of benefit that should come from positive pressure. I would like to have Dr. Gwathmey tell us how gradually he was used to removing the positive pressure.

DR. JOHN W. KEEFE, Providence, R. I.—It

has been my privilege to see Dr. Gwathmey give anesthesia in New York on several occasions, and I oftentimes wished we could have him at the hospital to help us regularly. But these expert anesthetists we cannot always have with us, and the great matter of anesthesia giving must be by men who are skillful. I feel that the interest taken by these societies of anesthetists has already done a wonderful amount of good.

Perhaps the drop method of giving anesthesia, which Dr. Gwathmey describes, is the method that is used to anesthetize a very large number of patients today. The gas oxygen method might be of value to a considerable number of people because it is absolutely easier to have an apparatus on many occasions, so if these men would study this other method as well so that they could commence to carry out the benefit of their experience with this method of giving gas oxygen in the lung surgery cases it might help a good deal. It would seem that there are times when it may be impossible to prevent trouble with this method. Your patient may become so debilitated that perhaps anesthesia may be impossible and that you may have to take off your mask. Then again you may have vomiting while the operation is going on, necessitating taking off the mask and again interfering with your operation. Most of the cases of empyema, to my mind, have been done with local anesthesia. There we have made scarcely any progress, and the fact that you can give the patient morphia previously and then use local anesthesia seems to be the most desirable. For some cases of abscesses of the lungs we merely will have to find some other form of anesthesia, and no doubt the gas oxygen method is the ideal method. Happily there are few cases of this type of operation that the average surgeon may have to deal with. Some men, making a special study of lung construction, will have special apparatus such as Meyer has developed in New York City.

I want to congratulate Dr. Gwathmey on his coming here with us, and also Dr. Truesdale, and I feel that the stimulation which these men have given to men who are doing surgery is going to be of unlimited value in the future.

DR. WILLIAM B. CUTTS, Providence, R. I.—My experience in lung surgery was very intensive and very short so far as any extensive experience goes. As a general surgeon, I suppose

I have seen some of the ordinary lung cases that come into the general hospital,—that is an occasional abscess and the empyemas.

About a year ago at this time, or a little earlier, following an epidemic of pneumonia in the United States Army General Hospital No. 2 in Baltimore, it was my duty to operate upon sixty cases, in three weeks, of acute empyema following the pneumonia epidemic that was raging all over the country. Some of those cases were operated upon at an early stage following the pneumonia and it was found in all of those cases where operation was done early before the empyema had had time to become localized and before pus had formed that the operation did not give relief, and that the patients all practically died. I was at that time Chief Operator under direction of a Major General, and we were instructed to use our own judgment. Those cases, of course, we operated upon without anesthesia, except local. Novocaine was used at that time. A short time later the cases that had developed a real empyema came to the attention of the surgical service and as I say something over fifty cases, or perhaps about sixty in all, were operated upon in a short time. Some of those cases that were in extremely critical condition with very rapid pulse, giving a warning of pus, and showing a temperature, were in septic condition. We operated simply by a puncture. All of those cases so operated were living when I was discharged from the army, and some were practically well. The other cases that were not extremely sick were operated upon by making a resection of one of the ribs, usually the eighth or ninth. A few of those were operated upon under novocaine local anesthesia. Those patients complained bitterly of the pain at the time of the operation in spite of the most careful use of the novocaine. It was impossible to resect the rib without causing pain. Some patients do not complain very much but stand a good deal of pain. It is impossible to anesthetize the tissues underneath the rib by any local anesthesia. Following that experience I thought we might use the nitrous oxide and oxygen anesthesia. This was administered by a trained nurse who had been especially trained to do this sort of work. I operated upon about thirty cases under this anesthesia—nitrous oxide and oxygen. They were practically all resections of the rib. All of those cases went through

the operation without shock or disturbance of their general condition and all suffered no discomfort or pain whatever, making a good recovery.

In my experience with those cases, I should want to give something beside the local anesthesia if it could be given safely. I believe that it is perfectly safe if used by a person accustomed to giving it, and the patient is very much more comfortable during and after the operation and suffers less from shock than under local anesthesia. It makes a great deal of difference how it is given. Anesthesia must be given with brains. I believe that with the proper use of these anesthetics, especially nitrous oxide and oxygen, the greatest benefit will come to the patients on whom they are used.

DR. JAMES T. GWATHMEY, New York City.—The principle of the thing is in determining who should be operated upon at once in order to prevent infection as well as for other reasons. We have used ether and sometimes chloroform and we now use nitrous oxide and oxygen, usually having three tables with two big tanks forming the extra table. The surgeon operating does not change his uniform, only sterilizes his hands, puts on sterile clothes, and has a sterile towel from a sterile nurse, and as we had two nurses we kept the bearers busy. We operated on twenty-seven patients, taking them just as they came. Some men sometimes found a foreign body, and after making an excision sent the patient away. The instant the surgeon was through, the next patient, who was prepared ahead of time, was already sterilized and waiting for him. This was done by using the same big tanks and simply changing masks, thereby determining the efficiency of any operating team by utilizing the full time of the surgeon. The surgeon never had to wait. There were on one day twenty-seven cases waiting for the surgeon between the hours of two in the afternoon and eight at night. The surgeon was sterilized from three to five minutes and by that time the patient would be ready, so you can see that no time was lost whatever. But, of course, he did not care to do that every day. In regard to the advantages of nitrous oxide and oxygen, we save the patient at the start from a deep anesthesia. It does not make any difference what kind. The method of light anesthesia was frequently used from start to finish, and this enables the surgeon

to do what he wants to do, and the patient comes out of the anesthesia as soon as the mask is removed.

Dr. Truesdale spoke of his discovery of how morphia was considered dangerous by the French surgeons. I was with the French army and recognized that same effect. You should remember that with the French surgeon if your mother was dying you would not give her morphia. They think it akin to sin to give a patient morphia. Dr. Truesdale's statement in regard to a mortality of fifty per cent. was mild. We were not able to follow up the mortality of our cases that far. These statistics will probably be published within the next twenty or thirty years. The mortality was something distressing, and it was terrible to see the fine men brought in dying in spite of every method and in spite of every kind of surgery taking place.

Dr. Miller's question in regard to the position of the patient is important. If the position of the patient was moved on the table in the first half hour after the anesthesia, it did not make much difference, but if altered after that it makes a great difference and causes a lowering of the blood pressure. If other work was to be done, we usually did that work first and then turned the patient over and did the chest work, but whenever a patient was moved after the first half hour of anesthesia it immediately caused lowering of the blood pressure. Sometimes the surgeon gets down under and keeps the patient in the same position. In regard to gradual removal of positive pressure, let it go down very slowly. Keep the positive pressure until the sutures are finally made and closed up and for some little time afterward, and then very gradually let down the pressure to about normal, taking as long as the case allows; if possible take five minutes.

Dr. Keefe referred to a universal method. Now a great many of us have been wondering about that, but little attention has been paid to it. One of the simplest methods I know of and much safer than the "drunk" method is simply to take the low pressure oxygen tank and attach a tube from the oxygen tank to a mask, just covered with a towel. Take salt and add to the water, chill, and put ether in and let oxygen through. Simply putting of ether on the mask is a much safer and better method. Dr. Keefe referred to vomiting necessitating removing the

mask. Sometimes the stomach would be full, but that did not occur very often. In such instances take the mask off, take a towel, wipe off the mouth and put back immediately.

Dr. Cutts referred to the local anesthesia and the trouble he had noticed with it. I have seen the same thing. I am glad to hear him bring out something that seemed to be in favor tonight. Pain is a great factor in shock. Now in using local anesthesia we have one method now used in thousands of cases in place of ether by mouth. By using the local anesthesia you will find that the pain is practically eliminated from your operation if used after ether.

THE THILERIUM HOMINIS

*A Preliminary Report on a Hematozoic Parasite
Found in Mucous Colitis.*

By CHARLES FENNER PECKHAM, M.D.,
Providence, R. I.

In the year 1914 after studying a series of histories of individuals suffering from various abdominal disturbances, the following conclusions were drawn:

1. That the majority of these patients dated their sickness from an acute abdominal illness, and that this acute illness often occurred in the first years of life, especially in bottle-fed infants.

2. That at the time of the initial attack, there was uniformly a great increase in the amount of intestinal mucus, and that these mucous discharges afterwards occurred periodically.

3. That following the acute attack, certain dyspeptic symptoms more or less irregular in their occurrence made their appearance; that the patient had to exercise care in the selection and the amount of food taken in order to be comfortable; and that there was a great liability of attacks of indigestion either acute, subacute or chronic.

4. That once or twice yearly, either in the spring or the fall, these patients were especially miserable, passed mucus, either glairy or membranous and that their powers of resistance were especially reduced at these periods.

5. That certain individuals, whose physical condition resembled that of laboratory animals in the condition of sensitization exhaustion from the parenteral administration of foreign protein, gave a history of an acute intestinal illness fol-

lowed by a long period of intermittently progressive gastro-intestinal disturbance.

6. That a majority of patients with the symptoms and signs of degenerative lesions in the kidneys, liver, heart, blood vessels, brain, spinal cord, nerves or ductless glands, in whom the possibility of a syphilitic infection could be excluded, give the same previous history.

7. That the urinary findings, more especially as regards the presence or absence, or the increase or decrease of the excretion of indoxylic acid, diacetic acid, acetone, oxalic acid, urobilin, the body responding to Ehrlich's aldehyde, tyrosin and leucin, were not materially affected by changes in diet, gastro-intestinal conditions, or by ordinary treatment.

8. That the results of the analysis of gastric contents, feces and urine, changed from day to day and did not seem to vary concomitantly with the physical condition of the patient; that these were irregular and confusing, and did not seem to correspond in any way with the severity of the enterogenous intoxication.

9. That in the history of these sufferers, three periods were apparent:

- (a) A period of acute illness followed by
- (b) A long period of intermittently progressive gastro-intestinal disturbance, with finally
- (c) A period of progressive organic changes ending in death.

The fact that these patients showed such variability of symptoms and physical signs, and a spring and fall exacerbation, lead to the suspicion of a chronic tertian malarial infection.

A careful and systematic search of the blood of these patients proved that this was not the case. It was noted, however, that the stained specimens of blood from these individuals very generally showed peculiar punctate bodies, both within and without the erythrocytes, that were at first thought to be the result of an imperfect technique in the staining methods. Trial after trial with freshly prepared stains and reagents conclusively showed that this phenomenon could not be ascribed to any error in technique or in the quality of the reagents used.

In the specimens of fecal matter stained by Gram's method, the presence of small spheres deeply positive to Gram's stain, which were at first thought to be bacteria or the spores of molds, attracted attention. These were so uniform in size,—one-fifth the diameter of a red

blood cell, as to be a cause for remark. They were uniformly present at the time of the mucous discharge. They defied all methods of cultivation.

So far, two signs were regularly present in all these cases,—(a) masses of punctate nuclear matter in the stained specimens of the blood, and (b) spherical Gram positive bodies in the intestinal mucus.

Having in mind the fact that the method of dark ground illumination had proven so valuable in the studies of the spirochaetae of syphilis, this method was tried upon the blood with a view of discovering the origin of these minute masses of nuclear material, fresh specimens of blood being used in the investigation. The specimens, however, contained such a wealth of the normal organic constituents of the blood, that this method did not prove to be of great utility.

Finally, a method combining a fresh specimen, a very brilliant source of illumination, a pinpoint diaphragm placed under the condenser, an electrically heated warm stage, and a thermometer set in the stage of the microscope was evolved that gave better results for this work than the indirect illumination.

The greatest advantage shown by this method was the speed with which the examination could be performed. The specimen of blood could be obtained and be under examination in the space of sixty seconds, and could be kept under observation for several days at body temperature if required. The specimens of blood were prepared after the method of Manson,¹ special attention being given to cleansing the skin at the point of puncture.

Upon first applying this method, the peculiar behavior of the deformed erythrocytes attracted attention. Strange to say, that while the normal circular red cell remained quiet, the poikilocytes not only had a to and fro movement but often showed progressive motion in straight lines; pushed other cells aside in the course of their travels;—all this taking place without the influence of any current in the specimen.

Upon examining the so-called "blood dust" in a series of specimens the fact that this varied in amount from day to day concomitantly with the physical condition of the patient proved of great interest. A careful study of these minute forms under this method of illumination and

at body temperature permitted a differentiation of this material into small specks, large specks, headlets and spheres, and brought forth the fact that outside of any Brownian movement, many of them showed progressive motion.

It was also noted that the headlets of large size seemed occasionally to have a great attraction for one another, went through the process of "clumping" with the result that small irregular masses were formed that showed an internal heaving movement.

While the study of these small headlets was in progress, certain very active bodies, varying in size from one-fourth the diameter to the full diameter of an erythrocyte and of perfect hour-glass or dumbbell form, were noted with considerable speculation as to their origin and nature. Finally, in certain specimens, in which the clumping stage was present when the blood was taken, these minute dumbbells were observed issuing from the clumps and swimming away freely in the serum.

In the specimens studied, these dumbbells were observed of various sizes but it was noted that any that exceeded the diameter of an erythrocyte were absent. When they reached this size, they disappeared from the peripheral circulation.

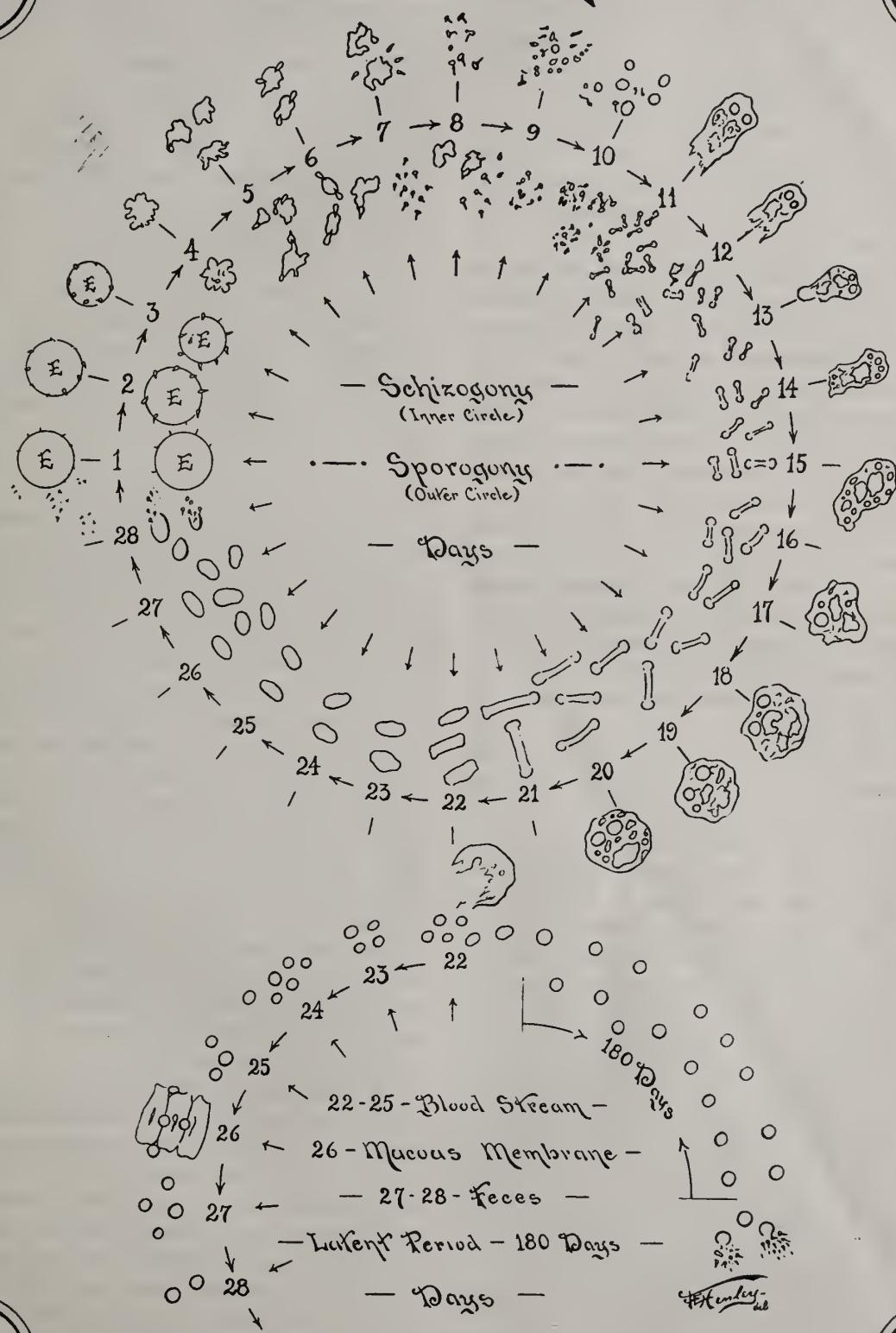
As these dumbbells increased in size, their contour changed. At first their form was very thin and attenuated. As their size increased, their isthmus thickened and in the larger ones it seemed to have exceeded the two poles in development, giving the micro-organism a very chunky appearance.

Finally, in a specimen taken from an individual showing a mild psychosis, who gave a previous history of gastro-intestinal disturbance, actively motile rods with clubbed ends were observed whose length was one and one-fifth the diameter of the red cell.

The character of the motion that these dumbbells showed was interesting. The very small forms were especially active, tumbling about and spinning first upon one pole and then upon the other. As their size increased they seemed to lose this youthful activity and gradually took on a progressive undulatory motion. This was especially noticeable in the large rod-like forms where an internal, writhing, corkscrew movement, suggesting the presence of an undulatory membrane, was the rule.

During the course of these studies the pres-

~ Thilerium Hominis ~



Schematic Representation of the Life History of the Parasite

ence of ovoids of a moderate degree of activity, and a trifle shorter in their long dimension than the diameter of the red cell had been very frequently noted. In most of the specimens these appeared as smooth ovoid masses showing an internal protoplasmic movement.

These ovoids were believed to be the mature form of the micro-organism and the harbingers of an acute exacerbation. The merozoites that they discharge at maturity are apparently ultra-microscopic.

Upon again taking up the study of the red cells, there appeared to be several different types of crenation. In order to avoid crenation from chemical and physical changes in the plasma, only those cells were examined that were surrounded by healthy, circular, dellated erythrocytes. Cells with fine, medium, coarse and irregular crenations were, for purposes of investigation, differentiated in this study.

As all these crenated cells showed,—(a) a movement that the erythrocytes crenated as a result of chemical or physical changes in the plasma did not possess; (b) irregularity of form that chemical crenates did not possess, apparently from a loss either local or general of the interreticular substance and a shrinking of the elastic reticulum; (c) that they were uniformly paler and more coppery in color than the chemical crenates; it was believed that the changes noted in these red cells were the result of the activity of some parasite.

In piecing this information together and checking the microscopic findings with the history of the patients, the conception of an infection, the length of life of whose parasite exceeded that of any others that are commonly encountered, excepting syphilis and other spirochaetiases, seemed plausible. The length of life of the parasite was estimated at from twenty-five to thirty days. At first it seemed impossible that any micro-organism should have a life history covering such a long period of time. In again comparing the histories and blood examinations, however, a remarkable monthly periodicity in the exacerbations was found in many of the individuals.

In taking up the study of the leucocyte, the question at once arose—what is the microscopic appearance of a normal leucocyte?

Upon going over the literature of the white blood cell, very little information on this subject could be found. Authors have directed their

attention to the diseased leucocytes, the transitional stages, the chemical reactions of the enclosed granules and the presence of pigment, but the description of the normal adult leucocyte seemed to have escaped attention.

Finally, the following characteristics were assumed for the normal polymorphonuclear leucocyte at a temperature of the human body.

(a.) The form should never remain spherical for any length of time. A cell that retained the spherical form was either deficient in vitality, or dead.

(b.) The cytoplasm should be absolutely transparent and should contain very little granular matter. Pigment, refractile granules, inclusions and spherical bodies should be absent.

(c.) The movements of the cell should be active and energetic.

A study of the leucocyte in these sufferers lead to the following conclusions:—The more miserable the patient, the greater the amount of granular matter in the leucocyte; that the cells containing the greater amount of granular matter lacked motility; that the cells containing large granules often burst and allowed these granules to swim away; and at the time or just before the onset of the spring and fall periods of the disease, leucocytes containing very highly refractile spheres about one-fifth the diameter of an erythrocyte in size, made their appearance.

The examination and study of the inclusion bodies in the leucocyte was also of great interest. These were found to vary in size in different leucocytes in the same specimen, and also in specimens from different individuals.

It was found that these inclusion bodies could be classified according to size and form. They were called, for matter of record and study, small, medium and large spheres, and small, medium and large dumbbells.

For a considerable time the behavior of these leucocytic inclusions proved to be a problem baffling in the extreme. Their reactions to various stains, the fact that some of them seemed to be growing at the expense of the cytoplasm of the leucocyte while others gradually broke down and disappeared, finally led to the conclusion that two separate phenomena were under observation in the white cells. First, the digestion of particulate protein with consequent changes in reaction,—from acid to alkaline, as the process progressed; and second, the develop-

ment of some micro-organism at the expense of the cytoplasm.

In comparing the microscopic findings with the history of these individuals, it was found that the phenomenon of protein digestion seemed to go on day after day as the disease progressed, but that when the larger inclusions began to appear in the leucocyte, an acute exacerbation with a great increase in the amount of intestinal mucus might be expected in the course of a week or ten days.

In this connection, the fact that active spherical bodies or kinetosporocysts appeared in the blood stream forty-eight to ninety-six hours before mucus bearing the spherical bodies one-fifth the diameter of a red cell, staining very deeply with Gram's method, began to be discharged from the anus, proved of the greatest interest.

These forms were then tabulated to see if a life cycle corresponding to that of any known genus of protzoa could be evolved. The sequence arranged according to the apparent increase in the mass of this organism was as follows: Minute dots, headlets, clumping stage, small dumbbells, medium dumbbells, large dumbbells, thick rods and ovals. From the study of individuals showing these forms in the blood, the following estimate was made:

Merozoites	1st to 2nd day	1 day
In the erythrocyte.....	2nd to 6th day	4 days
Headlets and clumping stage.	6th to 10th day	4 days
Small dumbbells.....	10th to 13th day	3 days
Medium dumbbells.....	13th to 18th day	5 days
Large dumbbells.....	18th to 21st day	3 days
Clubbed rods.....	21st to 24th day	3 days
Ovals	24th to 29th day	5 days

SCHIZOGONY 1st to 29th day 28 days

In some individuals this period was apparently as short as twenty-five days. The average for the cases studied was about twenty-eight days.

This cycle was apparently repeated five times in succession. Propagation by schizogony, therefore, covered a period of about 125 to 150 days.

Among the spherical forms the following sequence arranged according to the mass of the cytoplasm of the parasite seems reasonable: Minute dots, headlets, small and larger rings and large highly refractile spheres, 1.5 microns in diameter.

The following estimate of the length of life of the spherical form was tabulated:

Minute dots.....	1st to 2nd day	1 day
In erythrocyte.....	2nd to 9th day	7 days
Small and large rings, micro and macrogametes	9th day	1 day
Exogamy	9th to 10th day	1 day
In the leucocyte, or in epithelia, spheres	10th to 22nd day	12 days
In the plasma, spheres.....	22nd to 26th day	
In the fecal mucus, spheres	26th to 40th day	

SPOROGONY 1st to 23rd day 22 days

The period from the ninth to the fortieth day corresponds to the spring and fall exacerbations. In the period between the twenty-sixth and fortieth days, a great increase in the amount of intestinal mucus is usually present and often intense irritation of the sigmoid and rectum.

Assuming five cycles of schizogony as 140 days, one cycle of sporogony as twenty-two days and the latent period as 160 days, a period of 342 days elapses from sporogony to sporogony in each colony. In most cases of mucous colitis a prognosis almost prophetic in its accuracy can be given if these cycles and periods be kept in mind, provided no degenerative process is present in any of the internal organs. When such degenerative diseases are present, the symptoms of the annual or semi-annual exacerbations are generally referred to the organs in which the degenerative changes are most active, and the symptoms of gastroenteric disturbance lose the position of prominence in the clinical picture. The greatest mortality among sufferers from chronic diseases, as is well known, occurs in the spring and in the fall. That these periods correspond with the cycle of sporogony of these micro-organisms is a fact of some interest in this connection.

The smaller parasites attacking the human blood cells have never attracted much attention among medical thinkers; the larger parasites, however, which produce various disturbances in the blood and in the various internal organs, constituting the class of diseases known as malaria, have all been closely studied and their life history with but few exceptions is well known.

In 1903, Anderson² published the results of his studies of the Rocky Mountain spotted fever. His description of the blood conditions and the drawings that he made at that time may be called epoch making in the annals of the smaller human parasites. In this article he first enunciated the difficulty of applying any known staining methods in the study of these minute

organisms, and called attention to the quickness with which they disappeared when the chemical or physical conditions of the medium in which they lived are in any way disturbed.

In 1904, Wilson and Chowning³ published an exhaustive article entitled, "Histoplasmosis Hominis," dealing with the Rocky Mountain spotted fever from the clinical standpoint. The carefully drawn plates that accompany this article are well worth careful study.

In 1906, Ricketts⁴ carried out and published the results of his very interesting experiments in inoculations of guinea pigs and other animals.

He was able to demonstrate the infective power of the serum and erythrocytes from cases of spotted fever and by transferring the infection from guinea pigs to monkeys and back again, was able to keep the virus viable for several months. In the course of his investigations he also found that infected female ticks could transmit the disease to their offspring through their ova.⁵

In the life histories of the spirochaetaeae, more especially in the sub-order spirochaudinia, to which many of the relapsing and tick fevers of man belong, many interesting facts that may be applied in the study of these minute blood parasites may be found.

E. H. Ross and also McDonagh⁶ in their work upon the treponema pallidum, mention several phenomena in the schizogony and sporogony of this protozoa that are strangely paralleled in the biological processes of the parasites described in this paper. The behavior of the treponemata and the thileria in the leucocyte is nearly identical.

In 1916 Foster⁷ published the results of his investigation upon the common catarrhal colds. His description of the cultural experiments with these protozoa and also the very interesting experiments in inoculation that he conducted with this virus are extremely valuable in pointing the way for future investigation in human thileriasis. More especially in that he has succeeded in cultivating a virus and after cultivation has been able to transmit the infection to the human subject again.

The work of the Harvard Commission upon the disease Verruga peruviana, Oray fever or Carrion's disease, is also of extreme interest. Here we have a sub-tropical disease that attacks the red cells directly, producing a profound

anemic condition, and eventually leading to cutaneous symptoms.

Nicholl⁸ in 1898 reported certain small spherical bodies observed by H. F. Muller of Nothnagel's clinic in Vienna. He mentions the fact that these bodies do not give the chemical reaction for fat and believes that they are oxyphylic and neutrophilic granules extruded from the leucocytes. He also states that they show no progressive motion, but a very active Brownian movement. This is of interest, as the ring form of the thileria, which he apparently had under observation, is rather inactive, especially if the specimen is chilled.

Stokes and Wegeforth⁹ discuss these bodies at some length and conclude that they may have some influence upon immunity against bacterial invasion of the tissues. They think that, in the course of their studies of fresh specimens of bloods, they have seen these bodies leave the leucocyte.

As is mentioned above, I have often observed thileria leaving the polymorphonuclear leucocyte, but the reason for this exit I am unable to explain. Leucocytes, if kept at body temperatures, occasionally degenerate while under observation, forming apparently blood platelets, but any fine granular matter resulting from this process does not seem to have any active Brownian movement. It is of interest to note that the platelets, if the specimens are kept at body temperature, also degenerate, dissolving into the plasma. This affords a beautiful and easily demonstrated phenomenon of parental protein digestion.

In searching the literature of human parasites, I am unable to find any report of the observation of a hematozoic organism of dumbbell form.

On the other hand, investigators have carried these researches to a greater length in the lesser members of the animal kingdom. The information that has been gained from this source should in the future be of untold benefit to the science of human protozoology, and should ultimately lead to the solution of many of the obscure problems in human pathology as well.

The studies of the protozoa in the malignant fevers in sheep in 1880 and in cattle in 1888, conducted by Babes, may be called epoch making. This led to a closer study of other diseases of obscure etiology that had formerly been attributed to the invasion of bacteria, and in 1889 Laveran described the parasite of the malignant

jaundice of horses and established the sub-genus Nuttalia.

The work of Smith and Kilborne in the problem of the Texas cattle fever in 1893 and the tremendous economic results of these studies is well known.

Piana and Galli Valerio in 1895 described a form of Babesia that they proved to be the cause of the malignant jaundice in dogs.

The work of Theiler in 1903 in his investigation of the African East Coast fever in cattle is of extreme interest in connection with the subject of piroplasmosis.

His description of the minute bacillary forms and small rings, developing into pyriform bodies, and the protoplasmic masses containing numerous chromatin particles is especially interesting in connection with the subject at hand.

A marked analogy between the parasites of this class in animals and in human beings will be seen at once, and if the epithelial cells and the polynuclear leucocytes are substituted for the lymphocyte, the latter being the cell selected for the process of sporogony in the bovine race, the life history of the micro-organism within the body becomes nearly identical.

An interesting fact concerning the symptoms present in animals infected with this parasite is the absence of pronounced anemia and hemoglobinuria.⁶

It is a great source of regret that, through lack of time, I have been unable to carry out cultural experiments upon this very interesting protozoa. I find in my routine examinations of the bloods of my patients from day to day, that it is very prevalent here in America, and I have often wondered, if this source of foreign protein does not account for the variance in the types of diseases of the abdominal viscera from those we found in Northern Europe, when we used to visit the clinics of our late enemy the Teuton.

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Annual Conference of Public Health and Legislation

Called by the Council on Health and Public Instruction of the American Medical Association.

Thursday, March 4, 1920.

Auditorium Hotel, Chicago.

PROGRAM

Morning Program.

1. Call to Order, 9:30 a. m.
2. Chairman's Address, Dr. Victor C. Vaughan, Chairman, Council on Health and Public Instruction, American Medical Association.
3. Secretary's Report, Dr. Frederick R. Green, Secretary, Council on Health and Public Instruction, American Medical Association.
4. "Standardization of Public Health Activities," Dr. George E. Vincent, President, Rockefeller Foundation.
5. "Standardization of State Public Health Organizations," Dr. Charles V. Chapin, Commissioner of Health, Providence, R. I.
6. "Standardization of Municipal Health Organization," Dr. Allen McLaughlin, Assistant Surgeon-General, United States Public Health Service.
7. General Discussion, opened by Dr. C. St. Clair Drake, Commissioner of Health, Springfield, Ill., and Dr. Ennion Williams, Commissioner of Health, Richmond, Va.

Afternoon Program, 2 P. M.

SYMPOSIUM ON HEALTH EDUCATION OF THE PUBLIC.

1. "Health Education in the Public Schools—Thirty Years' Experience in Michigan," Dr. Victor C. Vaughan, Ann Arbor, Mich.
2. "Health Education and Activities in Colleges and Universities," Dr. John Sundwall, Director, Students' Health Service, University of Minnesota, Minneapolis, Minn.
3. "Health Education a Function of Municipal Health Departments," Dr. Haven Emerson, New York.
4. "Health Education a Function of State Health Departments," Dr. W. S. Rankin, Secretary, State Board of Health, Raleigh, N. C.
5. "Health Education a Function of the Federal Government," Dr. Charles V. Bolduan, Director, Division of Public Health Education, U. S. Public Health Service.
6. General Discussion, opened by Dr. John M. Dodson, Chicago; Prof. W. B. Owen, Superintendent, Chicago Normal College.

THE RHODE ISLAND MEDICAL JOURNAL

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RHODE ISLAND MEDICAL SOCIETY

Meets the first Thursday in September, December, March and June

JOHN M. PETERS	<i>President</i>	Providence
JESSE E. MOWRY	<i>1st Vice-President</i>	Providence
HERBERT TERRY	<i>2d Vice-President</i>	Providence
JAMES W. LEECH	<i>Secretary</i>	Providence
HENRY J. HOYE	<i>Treasurer</i>	Providence

DISTRICT SOCIETIES

KENT

Meets the second Thursday in each month

FRANK B. SMITH	<i>President</i>	Washington
J. F. ARCHAMBAULT	<i>Secretary</i>	Arctic

NEWPORT

Meets the third Thursday in each month

EDWARD V. MURPHY	<i>President</i>	Newport
A. CHACE SANFORD	<i>Secretary</i>	Newport

R. I. Ophthalmological and Otological Society—2d Thursday—October, December, February, April and Annual at call of President Dr. Frank J. McCabe, President; Dr. C. J. Astle, Secretary-Treasurer.

EDITORIALS

ENLARGING THE SCOPE OF THE JOURNAL.

During the past few weeks the JOURNAL has consummated a long cherished plan for bringing into closer contact the component medical districts of the State. When the RHODE ISLAND MEDICAL JOURNAL took over the activities of the *Providence Medical Journal* a little over three years ago, it was at first difficult to eradicate the idea that the new organ was the mouth piece of medical societies of the capital city. Now

that the JOURNAL has been revived and is in a healthy financial condition, it has seemed wise to expand our activities and to bring the county societies into closer touch. This has been accomplished by inviting a representative from each district society to act as an associate editor for his district. Besides giving the JOURNAL the benefit of his opinions on medical subjects in editorial form, he will act as reporter for his district, and furnish items of interest to the profession and reports of local meetings. We have been fortunate in securing the co-operation and pledges of support from gentlemen who are not

only recognized as leaders of medical thought in their communities but who possess literary ability as well. Such evidences of the latter talent as have come to hand lead us to believe that we have not been mistaken in our choice.

Dr. William F. Barry of Woonsocket will represent the northern part of the State; Dr. Charles S. Christie of River Point will represent Kent County; Dr. Asa S. Briggs of Ashaway will serve for Washington County; and Dr. Norman M. MacLeod of Newport for Newport County.

WHAT IS THE PRACTICE OF MEDICINE?

In these days when certain cults have developed from local sources to national importance—the question is apt to arise as to the methods used. Are these methods—whether they be manipulations of the vertebrae or manipulations of the mind of the seeker for relief—the practice of medicine? What is the practice of medicine? Is it—as some courts have claimed—the narrow interpretation of the word medicine, as “a substance or thing which has or is believed to have certain curative properties which are exercised upon the body by taking the substance into the system in some way or by applying it to the body externally” that determines the status of these cults; or is it the broader interpretation which defines medicine as “the science or system of curing, healing, alleviating or preventing disease, physical disorders and injuries without reference to the means employed to accomplish this end.”

If instead of the phrase “the practice of medicine,” the term “the healing art” were more commonly used—and this is the suggestion of the President of the Federation of State Medical Boards—there would not be the confusion that has been manifest in all courts that have to decide these matters. In our own State in 1898 the Supreme Court rendered a decision that Christian Science was not the practice of medicine—because prayer alone is used and no attempt is made to cure by physical means. Other Courts have made other decisions in regard to this cult, one from Ohio reading: “In praying for the recovery of a patient, a Christian Scientist is giving treatment to cure patients of disease and the patient pays therefor. He is thus practicing the healing or curing of disease.” In

1919—however—the Supreme Court of Rhode Island took the broader interpretation in the decision handed down concerning the ability of osteopaths to sign death certificates. They contend that the osteopath is practicing medicine within the meaning of the word and therefore is entitled to perform the functions of a regularly qualified physician under the law.

The chiropractors also come under the same category as was decided recently in a case before the Rhode Island Courts. The Court ruled that the practice of chiropractic was the practice of medicine. Will it be wiser to do as Colorado has done and have separate qualifications for the separate cults or to insist as New York does that every person practicing medicine should have similar qualifications? Undoubtedly under the Colorado system it will be easier to control the cults legally, but it seems as if the other method protects the public; and that should be the object to be attained for “*Salus populi est suprema lex.*”

SUPPORT THE MEDICAL SOCIETIES.

As professional men with a high sense of our duty to the public, we deplore examples of unrest in the industrial world such as railway, coal, steel and policemen’s strikes, which aim at the very root of our national life and existence. We would treat as a joke the suggestion of a strike of doctors. And yet the profession is sharing in the spirit of unrest which pervades the entire civilized world today. A visit to any of the well-recognized centres of medical learning in this country will show that very few men are working on original problems involving research. They go about their routine work in a lackadaisical spirit, satisfied with their accomplishments from day to day.

Medical societies have found difficulty in resuscitating themselves from the blighting effects of the war. While the attendance at meetings may show no perceptible falling off from pre-war standards, there is a lack of interest which is reflected in the spirit of the meetings. The papers read are palpably deficient in quality and interest. The discussion seldom rises above the mediocre.

In our local societies similar conditions prevail. The president has much difficulty in securing men to write papers for the meetings, and the editor is likewise harassed in persuad-

ing the writers to put their papers in suitable form for publication in the JOURNAL.

There is a tendency in certain sections of the profession to decry our local societies, and the statement is occasionally heard that the meetings are not worth attending. Why are they not worth attending? Chiefly for the reason that the very men who rail against them take no active part in the proceedings. If these men would collect their interesting cases, tabulate their results and report them at our meetings, we should have as interesting and productive sessions as any similar organizations in the country. It has always been difficult to overcome the inertia of the average man and get this sort of work started, but it has been infinitely harder since the war has ended.

It behooves us all to shake off this spirit of unrest which is inimical to a healthy professional progress in this community as well as elsewhere. Let us get down to work and produce papers which shall be of interest and profit to the local profession. Let us support the presidents of our local societies who are struggling under heavy burdens in attempting to make the meetings worthy of a larger attendance. In this way the JOURNAL will be furnished with interesting contributions which are read with profit by medical men all over the State, many of whom are prevented from attending the meetings. If the medical societies and the JOURNAL are worth keeping up, they deserve our whole hearted support.

THE WIDELY TRAINED MAN SHOULD WRITE MORE.

In medical literature we are blessed with the most able reports of the work of the scientific investigators who make medical research their aim. We have reports of the work of the specialists in all sorts of lines; the surgeons who confine their operations to a few inches of the body, and are absolute authorities on their own particular areas, the gastro-intestinal, orthopedic, diabetic, obstetric, neurological, x-ray, tuberculosis, pediatric, geriatric, and so on through the dictionary, specialists. All these able men find time to report their case findings, and we all are benefited thereby. But what of the man who sees a wider range of medicine, whose wider view of the field ought to give us new perspectives? We need more reports from

the surgeons who do general surgery, the medical men who see a variety of cases, the men who are able to see not simply through the high power microscope, but who can look abroad through the naked eyes, and see intelligently. These are the men who could check up and correlate the findings of the specialists and who could give us new relations of one thing to another. And yet our medical literature has little from their pens. Are they hesitating to have their more general observations compared with the intricate specialized observations? Are they too weary in the press of work to keep careful case records which would back up their deductions? It does not seem credible that the keen minds are all in the possession of the research workers and specialists. We want to hear more from the man with the broader training.

CASE REPORTS IN MEDICAL MEETINGS.

If one of the functions of Medical Meetings be that of teaching, then it would seem that the Clinical Department should occupy a much larger place. At the meetings of many societies the call for case reports is followed by a short silence and the meeting proceeds to transact its cut and dried business. It has been said that the doctor's sins are largely those of omission and not commission. If this be true a valuable means of keeping the unusual in mind would be the free discussion of cases. One of the most interesting departments of medical journals and medical meetings is the report of actual occurrences. A situation that a fellow member has actually handled is full of interest because it is real, and furthermore the witness is available for cross examination. It is rare to miss a veritable cross fire of questions after a case report from men who in the absence of any clinical discussion would not be heard from during an entire meeting.

Too often the report is simply a report of some abnormality which has not called for any skill in differential diagnosis and perhaps offered nothing remarkable in treatment. Even a rehearsal of the unusual is, however, a most interesting part of a meeting. The preparation of a case report should not be made too onerous lest the time required defeat the end sought. A case that has terminated in such a way as to make the diagnosis fairly certain, either by

autopsy or operation, or has shown a positive test of some sort, is more desirable, but one in which the diagnosis is reached by exclusion may bring forth a very wholesome discussion. The history need only contain the pertinent facts which are usually few. The clinical data and tests may be jotted down from memory or bedside notes, thus leaving for extra reading only the differential diagnosis, which may as a rule be had from any standard work at hand. Not much time will have been required to get the discussion started and once started a host of interesting and instructive facts are sure to follow.

A scheme might be put into vogue whereby at each meeting the secretary announce from an alphabetical list the name of the member who would conduct the Clinical Department at the next meeting. This part of the meeting might have a definitely established place and carry a time limit so that the conductor would know where to begin and how long to continue the discussion. With such a definite plan in operation it is probable that nearly every member would cheerfully and ably do his part of a clearly defined programme.

FEDERAL AID TO SOLDIERS.

In almost every community in the United States there is a discharged soldier, sailor, marine, or war nurse, suffering from some injury, or ailment, which dates back to service with the fighting forces.

Often this injury or ailment has made it hard or impossible for them to fit in where they did formerly. They are handicapped and need help; not charity, but mental and physical reconstruction. In many cases such people unfortunately keep their troubles to themselves. They are reluctant to seek aid or advice, for fear their friends might consider them weak.

The War Risk Insurance Bureau and the United States Public Health Service are especially anxious to get in touch with such individuals. The Public Health Service has set up a chain of reconstruction bases throughout the country for beneficiaries of the War Risk Bureau. These are not Army hospitals, nor is there Army discipline in connection with them, but rather a system of hospitals similar to the general hospital in large cities except that the

treatment is free and goes much further than in the ordinary hospital.

Recreation, vocational training and wholesome entertainment are combined with treatment. While men are being bodily rebuilt they have the opportunity of learning some useful occupation, or pursuing academic studies. They are taught not only to find themselves, but to better their condition. The environment is as homelike as it is possible to make it.

A great many men who went into the Army have developed tuberculosis and other diseases requiring special treatment. The Public Health Service has separate hospitals and sanatoriums for these patients, where they may get the best treatment known to medical science.

A large number of soldiers are not yet aware that the Government offers them free treatment.

SOCIETY MEETINGS

NEWPORT COUNTY MEDICAL SOCIETY.

The annual meeting of the Newport County Medical Society was held at Newport, January 22, 1920. The following officers were elected for the ensuing year:

President—Dr. A. F. Squire, Newport.

First Vice President—Dr. C. W. Stewart, Newport.

Second Vice President—Dr. Norman M. MacLeod, Newport.

Secretary—Dr. A. C. Sanford, Newport.

Treasurer—Dr. D. P. A. Jacoby, Newport.

PAWTUCKET MEDICAL ASSOCIATION.

The regular monthly meeting of the Pawtucket Medical Association was held at the Out-patient Building, Memorial Hospital, February 19, 1920, at 8:45 o'clock. Dr. Stanley Sprague was the speaker of the evening.

C. E. THIBODEAU, *Secretary.*

PROVIDENCE MEDICAL ASSOCIATION.

January 5, 1920.

The annual meeting of the Providence Medical Association was held at the Medical Library, January 5, 1920. The meeting was called to order at 8:55 p. m. by the President, Dr. Harry W. Kimball.

The records of the previous meeting were read and approved.

The Secretary's report showing a total membership of 313 was read and accepted.

The Treasurer's report showing a balance of \$1,278.61 from which \$300.00 is to be deducted for the use of the Medical Library for the year 1919 was read and accepted.

The report of the Standing Committee was read and accepted.

A motion was made by the Treasurer that a canceled personal check would be sufficient receipt for payment of dues. By permission of the President the order of business was suspended and motion carried.

The report of the Reading Room Committee was read and ordered placed on file. This report showed a total of 27 journals subscribed for the Library by the Association.

The next order of business being the President's annual address, Dr. Harry W. Kimball in a brief but pertinent paper urged the members to more active participation in the reading and writing of papers for the society meetings, as well as for medical transactions in general laying especial stress on the wealth of clinical material and experience in our community lost to the medical profession because of the inactivity of our members in working up and reporting their observations.

There being no counter nominations for officers and committees, a motion was made and seconded that Dr. Roland Hammond be instructed to cast one ballot for the entire ticket as recommended by the Standing Committee. The motion was passed, the ballot cast, and the following officers and committees were unanimously elected:

For President—Dennett L. Richardson, M. D.
For Vice President—Frank T. Fulton, M. D.

For Secretary—Raymond G. Bugbee, M. D.

For Treasurer—Charles F. Deacon, M. D.

For Member of the Standing Committee for five years—Harry W. Kimball, M. D.

For Trustee of the R. I. Medical Library Building for one year—J. T. Farrell, M. D.

For Reading Room Committee—George S. Mathews, M. D., M. B. Milan, M. D., Henry A. Cooke, M. D.

For delegates to the House of Delegates of Rhode Island Medical Society—A. D. Rose, M. D., George R. Barden, M. D., William H. Magill, M. D., Edward S. Brackett, M. D., William Hindle, M. D., Albert H. Miller, M. D., Frederick N.

Brown, M. D., H. G. Calder, M. D., J. B. McKenna, M. D., F. G. Phillips, M. D., George T. Spicer, M. D., C. A. McDonald, M. D., J. P. Cooney, M. D., W. A. Risk, M. D., George A. Matteson, M. D.

Dr. Roland Hammond and Dr. George A. Matteson were delegated by the retiring President to escort Dr. Richardson to the chair.

The new President thanked the members in a few words for the honor received, and announced that the appointment of committees by the President would be deferred until the next meeting.

The applications of Dr. Paul C. Cook, Dr. Hilary Connor and Dr. Parker Mills having been approved by the Standing Committee, it was moved that the Secretary cast one ballot for their election.

Dr. C. H. Leonard moved that the date and place of birth be substituted for age and nativity on the application blank, was seconded and carried.

The report of the Committee on a Memorial to Dr. John W. Mitchell was read. It was moved and seconded that the report be accepted, spread upon the records, and a copy sent to the nearest relative. Motion passed.

MEMORIAL TO JOHN W. MITCHELL, M. D.

The Providence Medical Association desires to place on record an expression of the profound sense of the great loss the Society and the Community has sustained through the death of Dr. John Waite Mitchell, which occurred February 27, 1919.

Dr. Mitchell was born in Norwich, New York, April 6, 1848. He attended Williston Academy, East Hampton, Massachusetts, and was given his degree in medicine at the Bellevue Hospital Medical College in 1870.

He then served as interne in Bellevue Hospital until 1872, where he came in contact with many of the noted medical men of the period, among whom may be mentioned Valentine Mott, James R. Wood, Crane, Flint, and Alonzo Clark.

Dr. Joseph D. Bryant was a fellow classmate and townsman, and a beloved life long friend of Dr. Mitchell.

In 1872 Dr. Mitchell entered upon the practice of medicine in Providence, and by his honesty, steadfastness, application, and marked ability,

placed himself at the head of the profession in this State.

He possessed in a large degree that essential attribute of the successful physician, a love for suffering humanity, and a willingness to sacrifice his own comfort to succor the poor and the sick.

Dr. Mitchell was family physician to the President of Brown University, and Dr. Faunce in his inimitable rhetoric has the following to say of our beloved friend and Fellow:

"The death of Dr. John Waite Mitchell means much to thousands of our citizens. He did not strive, nor cry, nor lift up his voice in the streets. Yet for fifty years he passed quietly, swiftly, from house to house, from office to hospital, leaving behind him everywhere gladness and gratitude.

"What were his politics? We can not tell. What was his religious denomination? We may not know. But there is no finer patriotism, and no more truly religious devotion than in such a life of self-forgetful beneficence.

"Scores of the leading men and women in our State were either brought into the world by his aid or carried through dark and perilous days by his tireless devotion. Many of us know that our children are his gift, and our parents are still with us, because of his skill. How eagerly he climbed the stairs of the tenement house and how lavishly he poured out his strength for unknown sufferers in our hospital. In the home of the sick and poor, learned and ignorant, he was a calming and healing presence, and our faith in him was deeper than our faith in medicine.

"He did not know how to rest. His only recreation was late at night to sit down with a medical journal under his office lamp, and while his patients were sleeping, to read of the triumphs of other workers in over-coming human pain. Himself he could not save. But while life lasts, many of us will find each day brighter because we remember his radiant smile, his feminine delicacy, his soldier-like courage, his rare union of science and sympathy, in the service of his fellow men."

Resolved that this memorial be spread upon the minutes.

GEORGE L. COLLINS,
FRANK L. DAY,
JOHN W. KEEFE.

Motion made and seconded that the dues for 1920 be \$4.00. Motion passed.

Motion that library appropriation of \$175.00 for the Reading Room Committee seconded and carried.

Dr. Skelton moved that Dr. W. R. White be called upon for a poem, to which Dr. White responded in humorous rhyme characterizing the officers of the Association.

Meeting adjourned at 9:45 p. m.

Attendance—44 members and five guests.
Collation followed.

RAYMOND G. BUGBEE, M. D., *Secretary.*

HOSPITALS

PROVIDENCE CITY HOSPITAL.

Dr. Maurice Miller finished six months' service on December 11, 1919, and began service at Rhode Island Hospital on January 1. Dr. Jonathan Hadfield began a six months' service on December, 1919.

On January 1, Dr. Arthur T. Wyatt finished a six months' service and began a service at the hospital in Scranton, Pa.

Dr. George Andrews finished three months' service December 31, 1919, to enter practice in Syracuse, N. Y.

On January 1, Dr. Benedict Olch, Harvard, 1919, began a six months' service and Dr. Merrill Parker, Syracuse, 1919, began a three months' service.

BOOK REVIEW

PERSONAL HYGIENE AND HOME NURSING.

A Practical Text Book for Girls and Women for Home and School Use, by Louisa C. Lippitt, R. N. Published by the World Book Company, N. Y.

There is no question but that such a book as Miss Lippitt has written has a distinct place.

Its purpose, as shown by the title is two-fold—that of teaching girls and young women the important art of right living and in giving them practical instruction in handling emergencies in accident and sickness.

The late war and particularly the epidemic of one year ago, has impressed upon the public the value of such training in the home. Admitting, however, that a little, necessarily superficial

knowledge may be dangerous to some, yet one cannot but feel that by the sensible way in which these subjects are presented in this volume, it will help in overcoming much carelessness and ignorance in these days on the part of most girls with respect to their health and to meet that so often utter helplessness in times of emergency.

The book, though admirable as it is in so many ways, is not without its faults. The author handles well those subjects with which she is so fitted to deal, namely, personal hygiene and nursing care of the sick, but in some of the chapters pertaining to disease conditions and their treatment, statements are made which are open to criticism and should at least be qualified. Again, it seems as if the author devotes too much attention in many places to discussion which will be of little practical value to the reader, where on the other hand it would be desirable for one to know more about the early signs and symptoms of the communicable diseases. For instance, she takes up at length the use of antitoxin in diphtheria yet fails to give the reader any idea what the disease is like in its various forms or when to suspect its presence.

These criticisms are, however, of minor importance and detract but little from the general usefulness the book should have.

E. S. W.

During the last twenty years it has been possible to reduce the general death rate in the United States from 17.6 to 14.2. This represents a truly enormous saving of life. Had the conditions of twenty years ago prevailed during the year just passed some 350,000 more persons would have died than actually did die. By dissemination of health educational matter the newspapers must be given credit for very materially helping in this substantial achievement.

BUREAU OF PUBLIC HEALTH.

MISCELLANEOUS

THE LIBRARY TABLE.

Many men have written and will, of course, continue to write, text-books of medicine. That such books have their uses no one can deny, for they are, as it were, abstract and brief chronicles of contemporary medical knowledge. As books of reference they are valuable, but for continu-

ous study they hold little appeal, unless perhaps, one is not averse to feeding upon sawdust. And how mechanical most of these books are: There is so little that is individual about them. You know just what to expect since they are all cut to the same pattern, and you are seldom disappointed. First you read a definition of the disease under discussion; then follow the inevitable paragraphs or sections on etiology, symptoms, morbid anatomy, diagnosis, prognosis and treatment. It is all very general, very abstract, having no doubt, the substance of learning, but wanting in that quality which gives a book its greatest interest and charm,—the personality of the author.

Now compare, if you will, these modern makers of books with the older masters of medicine. These latter are, we do not say more thorough, for that is not true, but more concrete, more vivacious. They give you as they proceed their own reflections upon their own experience. They do not feed you upon statistics,—for the most part of no great value,—nor do they when they inform you of other men's opinions, leave you in doubt about their own. They are not misty when they can be clear, diffuse when they can be concise, abstract when they can be specific.

All of this apropos of the older classic books of lectures on clinical medicine. Your library table holds, let us say, the works of Graves, Corrigan, Stokes together with those of Broadbent, Sir Thomas Watson and that brilliant Frenchman Troussseau. With Troussseau you walk the wards of the ancient Hotel Dieu; afterwards you listen while he discourses about aphasia. And how does he speak? Not in generalities, but thus, "Those very individuals whose intellect seems to be least impaired, have still lost some of it. Recall to mind the case of my colleague, who was aphasic for a few hours only, and who remembered so well the curious phases through which his mind has passed. He was seized while reading one of Lamartine's Literary Conversations. This is not fatiguing reading, which requires great attention, and yet he noticed that he did not understand well what he was reading. He put his book down for a while, but on taking it up again, he made the same remark. On then trying to speak, he could not utter a single word, and on attempting to write, could not manage it either; yet, alarmed by these symp-

toms, he moved his arms, his tongue, and thus ascertained that he was not paralyzed. He even collected his thoughts and asked himself what part of his brain could be, at that moment injured. His intellect, therefore, was of a greater range than that of many men, and yet it was impaired, as proved by the difficulty which he had in understanding a page of Lamartine." Who can read this, at once so vivid and so true, without acquiring what Cardinal Newman would call a real as distinguished from a merely notional apprehension of aphasia.

But perhaps you open the lectures of Robert James Graves delivered in the Meath Hospital in Dublin. If so you will admire his cosmopolitan scholarship, his clinical judgments born of wisdom, his large sympathy and magnanimity, his manner of speech, lucidly simple and appropriate. He sweeps a wide horizon of clinical medicine and has much to say about many kinds of fevers, especially as to their treatment. He remarks upon the *nimia diligentia medici*, so common in his time, and says that if you look at the plan of treatment employed by the physicians of those days, you will be prepared from a mere inspection of it to admit that it was at least as hard to escape the physician as the disease. Then follows in detail his famous plan for the feeding of fever patients, quite as valuable now as then. His lectures on bronchitis, to mention only one example, are full of helpful advice based on his multifarious experience. He wastes no time on high imaginings or verbal sophistries, but grasps the practical problem at once. "You perceive," he says, "that if a patient catches cold and gets an attack on the chest, it is of great importance to be able to ascertain what the situation and extent of the disease are, and whether the minute bronchial tubes are engaged or not. Now how do you know this? Simply thus,—You first make a cursory examination of the whole chest, by applying the stethoscope over the superior, middle and inferior portion of each lung, both before and behind; and if you everywhere hear something, you conclude that the bronchitis is general and not confined to any particular part. You next proceed to examine with greater attention these wheezing sounds; you apply the stethoscope, and if you find in each separate spot many sources of sound—if you hear a wheezing from a great many points close together—you may be sure that

the morbid sound proceeds from inflammation of the minute tubes, for the larger ones cannot exist in the small spots over which you apply the stethoscope in such numbers as to give rise to such a remarkable plurality of sounds. Of this you may be certain, that when you find a great many sounds are audible over a small space, the minute bronchial ramifications are engaged." No recent writer, we venture to think, has put the matter more succinctly or more clearly.

It would be interesting, did space permit, to illustrate from their lectures the evolution of ideas in the minds of men so different as Paget and Brodie, Broadbent and Sir Thomas Watson. Each after his fashion contributed largely to the upbuilding of clinical medicine and while many of their views are now extinct, their ways of viewing are as true and useful as ever they were. While they lacked many of our instruments of precision, they possessed remarkable instruments of prevision, trained intellects whose workings and products are of interest and practical value to us always. Surely we are no mere *laudatores temporis acti*, and yet it may be said that we do but surrender some precious part of our heritage when we neglect the writings of these older masters in the difficult art of healing, whose thoughts, as being those of masters indeed, are perenially new.

J. E. D.

MOTION TO ADJOURN.*

By WILLIAM R. WHITE, M. D.,
Providence, R. I.

My Friends I really must confess
I cannot even make a guess.
For life of me I cannot see
Why this great honor comes to me.

I think some person called my name.
If so, on him put all the blame
For he, as each of you, well knows
I can't adjournment move in prose.

If you'll permit the use of rhyme
The present task I'll not decline.
But some of you quite soon, must learn
To make a motion to adjourn.

There's one good thing about my verse,
Although it's bad it might be worse.
And this again I think is true
No better could be made by you.

And if elsewhere we chance to meet
And I in rhyme shall you then greet,
Do not exclaim, "this now must end,"
To Butler we this nut must send.

This one great truth we all well know
That men may come and men may go;
So if that law holds every where
It rules our presidential chair.

There surely is no slightest doubt
Regarding him who now goes out.
His rulings have been just and fair,
Delivered from that honored chair.

By his address to-night we're taught
A man is he to lead men's thought.
And well may we again rejoice
That we last year made him our choice.

With dignity and charming grace
Of manner, language, form and face,
He's shown us parliamentary lore
That rarely has been seen before.

His winning voice, his genial smile
Prove this young man is free from guile.
But one conclusion can we reach
Our "Harry" is indeed a peach.

Now if perchance we mutely grieve
To see Doc Kimball take his leave
We need not likewise now conceal
The satisfaction we all feel,

That to the place once held by him
Doc Richardson now enters in.
For this one thought fills every mind
That better man we could not find.

For well we know its his intent
To be a first class president.
Our duty now becomes most clear.
Make Nineteen twenty our best year.

In that far corner, off one side,
We see again our last year's scribe;
Cause of re-election is
We think we know he knows his biz.

He sits behind that same big book,
Behind which once sat Charley Cook
To speak whose name now makes me glad
I call him son, he calls me dad.

Doc Bugbee will, keen notice take;
Of what's done here he'll record make.
Whatever we may have to tell
He must write down and do it well.

I fancy he may sometimes hear
Things said that seem a little queer
So on the whole he much will learn
And at same time his salary earn.

To-night our minds should thrill with pride
At thought of him who's lately died.
And who before the whole world stood,
Physician wise and brave and good.

He Knighthood had, conferred by King,
With all the honors it could bring;
But far more bright the great renown
His life and deeds have handed down.

A life like his can't half be told,
Its value measured not in gold;
Beyond the skill of writer's pen
Impressions made on hearts of men.

Although he held the highest place,
Of arrogance no slightest trace.
A joy it is to doctors all
Our Osler we may brother call.

As thus we are assembled here
On threshold of another year
Its well to give brief thoughtful heed
To what shall be our New Year's Creed.

Mankind would surely know less strife
Were Golden Rule the guide of life.
Such life indeed were sweet and true,
As you'd have done, so do shall you.

The Great Physician's creed observe,
He came on earth to save and serve.
To-day for us how grand the plan
I my brother's keeper am.

Let us our watch word now recall
It's all for one and one for all.
Unselfish service, kindly deed
That is our grand physician's creed.

Fraternal love, each one his part
With hand to hand and heart to heart,
United thus it seems to me
We may in truth close brothers be.

To-night and here I dare foretell
Such rule of life will serve us well
With greetings now I drop my pen,
God rest you friends and gentlemen.

If only Doctor Burge were here,
The expert whom we all hold dear,
My duty then would be complete
'Twere simply this, to keep my seat.

We haven't seen him here of late
And now I learn he's left the State.
This word from him to you I bring
That he'll be back in early spring.

So if to me the honor's come
I willing am to be the one,
And trusting you will all approve
Adjournment, sir to you, I move.

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ORIGINAL ARTICLES

CLINICAL NEUROPATHOLOGY AND ITS VALUE IN GENERAL PRACTICE.*

By FREDERIC J. FARRELL, M. D.,
Providence, R. I.

"* * * And toward such a full or complete life, a life of various, yet select sensation, the most direct and effective auxiliary must be, in a word, insight."

The truthfulness of such a quotation can be no more apparent than to one who deals with those problems involving the intricate mechanism of the nervous system, emotional tone and instinctive life. The study of these phases of the nervous life of the individual has become, within the last decade, a special scientific branch of that large subject psychopathology and yet it has only gradually been able to break its attachment from that dominating parent and start out for itself in life's great battle. This endeavor to be empirical is merely the result of a general transformation of scientific activities and an extension of interests and methods from the inorganic field into the realm of the living—living creatures,—and then from a general life to a more special form, such as neuro-psychiatric, neuro-biological, bio-chemical and so forth. And still all these special branches over-lap, requiring one always to keep before one's attention the bio-chemistry of metabolism, social obstacles, infections and other exogenous factors.

Complete insight into any problem, especially that of a human being, can only be acquired by "going at it" from its very origin and following it through its various stages of evolution. Yet it is necessary in so doing not to confuse the evolution of theory with that of accumulated facts; that is, one must systematize one's ideas in this building process. Synthetic chemistry

and pharmacology indicate one phase of an industrial development which has borne a close relation to the progress of science. In psychiatry and psychology, as well as the various other specialties in medicine, analysis or analytical methods have grown with great rapidity within the last fifty years. But, there can be little doubt, that, here, too, in the sphere of medicine there will soon be offered to our profession a synthetic psychiatry, a synthetic psychology, a synthetic clinical medicine. It is the writer's belief that the modern movement towards dynamic psychology, dynamic physiology, dynamic pharmacology, or what might be termed in general, "dynamics" will add a material interest not only to the specialist but also to the practitioner of general medicine. The cry today is "HOW",—"How did it happen", "How did it take place",—followed by the second query, "WHY", "Why did it happen", "Why did it take place?" That is, we are all interested in cause and effect.

It is not my desire to go into the history of developmental medicine nor to burden you with data, dates or names of many of our famous workers in psychology, physiology or clinical medicines. But it does appear to be my duty not to enter this very interesting subject of clinical neuro-physiology, or better, neuropathology, without a few words as to its development from the standpoint of psychology and physiology in medicine.

Up to the middle of the nineteenth century we have had given to us the wonderful works of Helmholtz, Fechner, Donders and others whose theories were applied in psychology, physiology and esthetics. In the seventies, however, a new spirit entered the scientific world, first as a physiology and later as a physiological psychology. It was through the influence of Wundt that psychological laboratories made their appearance in Europe. But coincident with his findings in Europe the Harvard and Johns Hopkins Universities developed similar types of laboratories

* Read before the Providence Medical Association, February 2, 1920, (with lantern slides).

in America. Abreast with these psychophysiological laboratories began the gradual and progressive development of experimental psychology (Thorndike), the biological interest in evolution (Hall), studies in heredity and individualism (Darwin and Galton), child psychology (Hall and Phister), anthropology (Geiger and Muller), pathological psychology (Moreau de Tours, Maudsley and Kraepelin) pathological retardation (Sequin and Binet), psychotherapy (Charcot and Janet), analytical psycho-pathology (Freud and Jung) and the more recent problems of industrial psychology, business psychology, legal and forensic psychology and the broadening in our colleges of a most valuable branch in that department, namely, educational psychology. At this point one might add that there should be instituted as a major subject in all colleges and preparatory schools not only educational psychology but also educational psychology plus sociological psychology.

Notwithstanding these many divisions there is an appreciative tendency for all to point towards one common goal and there to unite in the adoption of the genetic problem,—that problem, again, one of origin and development, whether it be an abnormal child, a deluded man, a pathological liar, a hydrops of a joint, a convulsive seizure, an infantilism, a character twist, or a personality failure.

However, in presenting this subject an attempt will be made to synthesize the human being and devote one's attention to the mechanism and interrelation of the various parts or theoretical groups and systems, prestructural, as it were, uniting them and emphasizing the deviations from the normal. The development will show briefly some few pathological-physiological facts and their dependence, both physiologically and pathologically upon the action of the nervous system with the resultant biochemical and metabolic disorders of both a qualitative and quantitative type. A comparison by way of symbolization will be drawn between this synthetic method and the "tumblers" in a safe door or lock. As you are all aware there are rollers and plates placed in various positions up and down and forward and backward which will respond only when working in harmony either with the combination of the safe or the

key of the door. One often hears the expression "a tumbler has slipped" or "the tumblers have been changed." These various systems might be symbolized as "tumblers" which when properly placed and fitted will "tumble" in harmony, and which when disturbed or out of place will cause the lack of response to normal individual or racial adjustment.

Let us begin with the muco-cutaneous system. If one could theoretically estimate the length and breadth of the entire skin area it would equal approximately three by five feet. To this one should add the length and breadth of the gastro-intestinal tract from the muco-cutaneous junction at the mouth to the muco-cutaneous junction at the anal opening and then one would have a fair conception of the entire skin and mucous membrane area which is open and free to the outside world. That is, man, in his visceral body, is a closed cavity (not so in woman, however). The histology of skin and mucous membrane may be theoretically divided into three parts, the glandular, the vascular and the neuro-muscular. In the skin are the sweat glands, the cutaneous vessels and the pilomotor and smooth muscle. Correspondingly in the gastro-intestinal tract are the secretory glands, the highly vascular membranes and the smooth muscle (unmixed) which begins at about the second third of the esophagus and extends to the internal sphincter of the rectum. Each part of this muco-cutaneous system is under neurogenic control either through the sympathetic, the autonomic or the motor-sensory system and governs, probably, its bio-chemical or metabolic processes.

In pathological disorders, however, it is the endocrinologist's belief that the bio-chemical and metabolic phenomena are the result of pathological functionings using the nervous system only as an intermediary. That is, the endocrinologist begins with one system, the ductless glands, and views everything pertaining to the patient's difficulty through those spectacles.

Such pathological conditions as occur in the skin are abnormal areal sweatings or dryness; areas of flushings, oedemas, "gooseflesh", variations in temperature; selective arterial spasms (angioneurotic oedema, erythromelalgia, intermittent claudication, etc.) May not the gastro-intestinal mucous membrane suffer in addition

to the conditions recognized as ptalism, hyperacidity, ulcer, intestinal indigestion, also from abnormal secretory disorders, arterial spasms, variations in temperature or even localized oedemas?

The next system to be evolved is the cardiovascular with its great length of arteries and veins distributed everywhere throughout the body. Beginning with the heart, a special smooth muscle tissue, there are going away from it the blood vessels, large in their beginning and diminishing in size to the arteriole, containing throughout smooth muscle and in their supportive tissues the well-recognized vaso-motor nerves. Physiology has given us the rate and rhythm, the blood pressure, the contractility of the blood vessels, etc. Pathological physiology has shown us that there may occur bradycardia or tachycardia, arrhythmia, high or low blood pressure, vasomotor paralyses, flutterings and muscular irregularities of the heart. These may be associated or manifested by fainting attacks, swoons, convulsive-like seizures, blanchings of the skin, disturbances in respiration, variations in the CO_2 coefficient. One might even go further and suggest that such disorders might be manifest in changes in the chemistry of the blood as shown in the combining power of CO_2 , in variations in the non-protein nitrogen content, the uric acid value or McLean's coefficient.

How close this vascular system is to the active principles of the muco-cutaneous system. One of the chief activities of the mucous membrane system is that of absorption which is effected, undoubtedly, through the circulation by the influence of the nervous system. It is a well known fact that absorption, especially in the stomach, is subject to certain variations which are almost entirely dependent upon the circulation and its relation to the nervous system. Liquids, for example, may in one instance be readily absorbed and yet again may be retained in the stomach for a considerable length of time when they may be rejected in nearly the same condition in which they were taken in. It is probable that the small arteries may become so contracted under the influence of the vaso-motor nerves that their calibre may be even obliterated. It is probable that this is one of the theories offered for the production of gastric ulcer. For,

there are usually associated, in ulcer cases, other symptoms indicative of gastro-intestinal neuro-circulatory disorders.

The third system to be considered is the endocrine. Claude Bernard and Brown-Sequard were probably the first physiologists, who, in 1893, offered theories as to the mechanism of the internal secretory function of the ductless glands. To discuss this system would be hazardous and well without the limits of this paper. Only as it bears a relation to our synthetic problem will it be touched upon. The entire chain of glands might be divided into any number of combinations or working groups such as pituitary-thyroid-ovary; thyroid-pancreas-adrenal; and so on. Glay has stated: " * * * it follows that the tone of the muscles of the blood vessels in so far as it depends on an automatic stimulation, either direct or indirect, is maintained not only by nervous stimulation, variations in gases contained in the blood and by the products of the catabolic processes but also by a specific substance normally found in various glands, * * * Many have occupied themselves with determining these functional correlations of a chemical nature, connecting them with one another and at the same time differentiating them from the correlation of the nervous origin—it was also recognized that there are still others which form an intermediary class, the neuro-chemical correlations or functional manifestations provoked by the nervous system, this nervous action determining a chemical excitation which is carried to some other part of the nervous system."

Histologically these glands are highly vascularised tissues with an abundance of secretory surface, hence there may be at least two types of disorders, one where the lack of secretory activity is due to the perverted or disturbed vascularity, a qualitative disorder, and the other where the secretory activity is either abundant, diminished or lost, a quantitative disorder. The neurogenic supply of these glands is through the sympathetic nervous system in general but it is probable that the pancreas and the thyroid receive a double innervation. The nervous or posterior lobe of the hypophysis, the sympathetic ganglia and the paraganglia of Kahn as well as the nervous elements recognized in the adrenal bodies are also parts of the sympathetic nervous

system directly related to the ductless chain of glands. Specialized nervous tissue of undoubtedly sympathetic type has been found imbedded in the kidney as well as in the ovaries and testes.

The clinico-pathological pictures, it would naturally follow, will be different. In the quantitative disorders one would expect to find frank syndromes such as the well recognized giant or dwarf, the macro-genito-somatotrophic type, the cretin or the Basedow's individual, the case of infantilism, Addison's Disease, etc. These quantitative disorders may therefore be placed in the same group as any actually destroyed tissue or function, namely, as one of an organic inferiority, lack of development or a cessation in development at a time earlier than the remainder of the body tissue. But in those disorders in which the vascular supply indicates a qualitative one, the symptoms will be less marked in direct relation to the glands and bear only a secondary relation to those manifested by the general vascular disturbance affecting our other systems as well. One can now add to the muco-cutaneous system and the general vascular system one which the writer will recognize as an associative system, the endocrine.

The fourth system to be considered is the sympathetic nervous system. It is a ganglionic trunk of fibres extending along the vertebral column on each side of the body the ganglia of which are connected with most of the spinal nerves by communicating branches. The nerves of this trunk belong to what may be called the cerebro-spinal visceral system. This system is recognized as the regulatory mechanism of the viscera. All parts of the visceral nervous system which lie peripherally to these communicating branches between the sympathetic ganglionated trunk and the spinal root constitute the sympathetic nervous system proper. Therefore, this full system includes the aforesaid visceral and those ganglionated plexuses in the head, chest and abdomen.

Its function both through its sympathetic and autonomic fibres is to regulate all smooth muscle, whether it be in viscera, blood vessels, bronchial tubes, reproductive organs, skin, iris of the eyes, etc. One may now add a fourth "tumbler" to our synthetic product whose duty it appears is to control all contractile tissue, which is a domi-

nant factor in our associative system, the ductless glands, our general cardio-vascular system and our muco-cutaneous system.

Our next system is the most intricate, the cerebro-spinal. It, too, is an organ with an organic and a functional function. It is a specialized tissue, highly vascularized and within its confines are developed all those organic or intellectual phenomena which distinguish man from animal,—speech, writing, reading, reasoning through intelligence, education, etc. Disturbances of a quantitative type in certain parts of this cerebro-spinal system produce those gross disorders not uncommon to all of us. But there may be coincident disorders due to quantitative disturbances elsewhere, such as a defectiveness due to an abolished thyroid, to an over-active thyroid, to an aplasia of the testicles, to infantile ovaries, etc., but here again they are all manifest organic inferiorities.

In addition there may be manifest after minute examination and study, disorders in vascularity without a quantitative disturbance as is manifest in certain types of lapses of consciousness, seizures of an epileptoid nature or even disorders manifest through spasm of the cerebral blood vessels due to vasomotor difficulties. Here the condition again is a qualitative type and probably is one bearing a close relation to the neurogenic control of the blood vessels themselves.

The functional function of this system is the mind with its diversities in growth and development and its adjustment. The mental processes which are expressed through thought are probably "reactions to stimulations", which are what a man really does qualified by what he is. One must now add three co-ordinative-interlacing factors which undoubtedly are inter-related and play a strong part in the life of man; first his personality, second his emotion and third his environment. And thus heavily laden he is turned out into this world to become a part of a social unit and yet to live in it he must live harmoniously.

The personality of an individual is often-times an obstruction to his personal welfare. He may be too tense or too loose; he may be inverted in his character; he may be twisted

in his instinctive demands. His volitional life may be undeveloped. His ambitions may be too idealistic. His moral code may be side-tracked. His ethical life may be bloated, and so on.

The emotional life of these individuals may be similar to the actions of an auto attempting to run with the brakes tightened, a depressed or melancholy type. Or the brakes may not work at all as evinced by the manic type. Their steering gear may be out of order as is seen in the schizophrenics. Their affective tone may be merely weakened and as a result it does not respond or adjust itself to the ordinary problems of life.

The environment under which one is compelled to live may bring about worry which is merely a conflict between hope and fear. It may be that their problem is a religious one with conflicts which may prevent them from living at ease even in their own home. It may be a social maladjustment, a misfit in society. Or the problem may have a repressed or abnormal sexual basis. With all these problems, environmental, emotional, personality disorders, mental difficulties, there may be a corresponding reaction affecting the tonus system with variations in the endocrine output through disorders in the cardio-vascular response producing bio-chemical and metabolic disturbances.

Sherrington once said, "Environment drives the brain and the brain drives the body." Can it not be that this sympathetic nervous system, both through its sympathetic and autonomic fibres plays a most important part in the adjustment of man to himself and to life, that is, that this particular nervous system is the stimulator into action? That when all the other systems are working harmoniously this nervous system becomes a regulator, that it controls and directs functional conditions, that it has the power to influence conditions and that it is only when it is aroused by organic inferiorities, by disorders in mentality, by disturbances in emotion, by twists of the personality that the many, many varieties of cutaneous, gastro-intestinal, cardio-vascular and glandular syndromes develop.

We thus have our series of "tumblers" as manifest by the various systems here touched

upon placed together in a synthetic manner producing a probable individual. In producing this individual it has been the writer's desire to emphasize the neurogenic control of the cardio-vascular and glandular systems which will manifest itself in many types and varieties of disorder of a qualitative type as well as the frank manifestations of a quantitative type.

DISCUSSION OF DR. FARRELL'S PAPER.

DR. CHARLES A. McDONALD, Providence, R. I.—I am very glad to be here to-night to hear Dr. Farnell's paper, but I am not very glad to discuss it. As I said a moment ago, Dr. Farnell has given us a vast amount. His pictures alone are an entertainment in themselves, and I would like very much to hear Dr. Farnell discuss more of the case pictures, which he presented, and go more into detail about the cases of which he is enthusiastic. The dynamic conception of activities is most stimulating and really instructive. Some of us, who do not know so much about the subject as Dr. Farnell, find it extremely difficult to explain some of this process. Some people are more readily convinced than others, but in trying to explain some of this we get to a point where we want to quit. I think that Dr. Farnell deserves to be congratulated on his ability to work, investigate and apply. I believe that Dr. Farnell and his associates are going to show us something, and I believe that in looking at it from a dynamic point of view they are going to show us a lot. I think probably that some of us would like to have Dr. Farnell tell us more what he means about personality in relation to emotion and environment. There are many of us here tonight who are unable to understand the importance of the functions of the vegetative nervous system in relation to personality. From the dynamic conception types of personality do occur and in this process the endocrine system plays an important part. The paper in general stimulates attention to this line of thought. For this fact alone we ought to be thankful for the presentation.

DR. FREDERIC J. FARRELL, Providence, R. I.—I do not wish to start in to explain personality. I think I have said enough about personality in the few things mentioned. Of course, one who

has to deal with emotional people in the manner that some of us have to in hospitals for nervous diseases and perhaps mental diseases, find that emotion is one of the hardest problems to handle. The question has already been raised whether or not emotion is in our body, in contradistinction to being in the brain. I do not want Dr. McDonald to feel that I thought it was in the brain because I don't know where it is, but it is probably a higher center of some kind that has not yet been discovered. There has been recently, some work produced, in one of the universities where they sought for and discovered a higher center or a higher something where it was observed that certain individuals could do certain things whereas others could not.

By personality I mean the general make-up of the individual. Everybody has a way of sizing up an individual—that I look upon as personality, but then in addition to that I add the manner they should respond to certain demands. If I see that a man looks like a psychopathic individual or a psychotic, I go further into his moral life, his ethical life, his volitional life, and see if it coincides with what is generally recognized as a psychopathic. It is what he is really that you are searching for.

THE NEED OF MENTAL HYGIENE IN RHODE ISLAND.*

By ARTHUR H. RUGGLES, A. M., M. D.
Providence, R. I.

The object of mental hygiene, as conceived by the Rhode Island Society for Mental Hygiene, is to aid in the work for the conservation of mental health, to help in raising the standards of care for those suffering from, or in danger of developing, nervous or mental disorders, to stimulate public interest in this problem and to disseminate knowledge concerning the causes, prevention and treatment of such disorders. As is clearly recognized, the trend of all modern medicine is towards prevention, and never have we been more clearly impressed with the needs of prevention in the case of nervous and mental diseases than we are to-day, as a result of the experience gained in the World War. From that experience we received two

most important lessons and it behooves us immediately to heed these lessons and so do our bit in the correction and prevention of disorders of the nervous system in our community. We learned, first, that there are many individuals among us whose nervous systems are below par, and when I use the term "nervous system", I mean to include the brain, the most important part of the nervous organization, as well as all other structures connected with that most important controlling part of all our activities. Our Draft Boards sought to exclude those who were visibly unfit, but on account of the pressure for men and the necessarily hurried examinations, many individuals, some with defects of the nervous system that should have been obvious to the trained examiner, and others much more obscure, were allowed to enter the service, and the great majority of these promptly broke down and have furnished a considerable percentage of the cases now requiring treatment by our government. It has been estimated, by competent observers, that 38 percent. of all former soldiers, sailors and marines, now needing treatment from the government, are suffering from nervous or mental disorders. This serves to show us what an important part this special branch of medicine plays in the problem now facing our government as a result of the late war, and it should also impress upon us how great a problem is before us in the proper consideration of the neuropath and psychopath in our civil life.

The second lesson that we have learned is that such cases seen and treated early offer a vastly better chance of cure than if they are allowed to drift on for weeks and months without proper guidance and care. In peace times the physician does not ordinarily see cases of nervous and mental disorders until they have existed for weeks and often for months. As a result of this delay, many of these cases have become too deep-seated for cure when they seek medical advice. During the war, all this was reversed. Soldiers presenting any abnormality of thought or conduct were usually seen very promptly by the medical officer of the neuro-psychiatric service and the percentage of cures in such cases was therefore vastly higher than under civil conditions. It was not unusual in the army to see cases showing frank mental

* Read before the Providence Medical Association, November 3, 1919.

symptoms a few hours after the onset of such symptoms, when medical officers, trained in the treatment of such illnesses, instituted prompt treatment, removed the patient from the trying condition under which he had broken down, placed him under a regulated regime, administered appropriate therapeutic measures and were rewarded by seeing many cases which, seen under the civil conditions of delay and vacillation run a prolonged and often chronic course, make a recovery in a few days or weeks. With these lessons at hand it seems that the course to be pursued by those interested in mental hygiene is obvious; we must work to see that those whose nervous systems are below par are so directed that they shall not be subject to unusual stress and strain, and the great variety of difficult adjustments, which beset us in these days of unrest. The public should be educated to the advantages of early treatment of all cases of neuroses or psychoses.

In the old days if a member of a family exhibited evidences of mental disorder, it was thought that the facts should be concealed in the family council until the home could no longer cope with the problem and that then and only then should the problem be shared with the medical profession and then only for the purpose of "putting the patient away".

In the lessons of modern experience we realize what an injustice was done to the sick man and why our percentage of cures in mental diseases was not higher as the result of this ignorant procedure.

When we look back upon the work done by the neuro-psychiatrist in the World War, we begin to realize what an important part this branch of medicine has begun to play in our modern life. For the first time in the history of the world a physician, trained in nervous and mental diseases, known as the division psychiatrist, was assigned to each division of the army of the United States. At first these medicos, with the strange title, were looked upon with a great deal of suspicion, but it was not long before each one of them became a valuable link in the chain of efficiency of division organization. They were appealed to by the Judge Advocate in every case that came up for general courtmartial. The regimental surgeons sought their advice in questions re-

garding obscure disorders in the men under their charge. The boards having to do with promotion asked that the division psychiatrist should examine certain men coming up for promotion who had shown difficulties in adjustment and division headquarters asked advice concerning problems of inefficiency and mal-adjustment among officers and men coming under their attention. So it gradually became recognized that soldiers showing definite nervous disorders could receive the best advice and treatment from those trained in the care of such diseases. And so it was seen that many of the difficulties in the army were difficulties in adjustment, due largely to psychological problems and here again the knowledge concerning abnormal psychology often proved the panacea for officers' apparent inability to handle men, for men's discontent and infringement of military rule and as a force to counteract depression, seclusiveness, suspicion, and psychomotor over-activity. In the army thousands of unfit were taken from the places to which they were improperly suited and were placed where they could make adequate adjustments. The incipient cases of mental illness were removed from stress and strain and put under proper treatment and a general oversight was kept over the mental health of the personnel of the division and prompt treatment was instituted to correct and overcome maladjustments. If this could be done in the army in time of war, to how much greater degree could it be successfully carried out in the problems of peace-time life, where causes and conditions can be thoroughly investigated, where treatment can be instituted without limitations of resources to work with and where the co-operation of family, social organizations and all medical facilities can be secured?

In a state campaign for mental hygiene, one of our earliest efforts should be to make it easier for the sick person and his friends to obtain advice. Special clinics should be multiplied and made easily available for all persons at all times. Every general hospital should have in its out-patient department a clinic for nervous and mental diseases. Every nursing organization should have nurses either in its organization or easily available to undertake the management of such cases as may be in their locality.

We should do more follow-up work. Each patient who has suffered from a nervous breakdown should be seen at intervals by a trained worker and should have the help of someone with experience to assist him in the difficult adjustments which he is called upon to make in present day life. Many a family is pulled down to the level of a nervous member simply from lack of help from a physician or nurse in pulling the standards of the nervous individual up to those of the family rather than the reverse.

In the last ten years we have learned much about the disorders of internal secretions and although we still have a great deal to learn about this intricate problem, we know that there are many individuals in our community suffering with nervous disease in whom the whole difficulty is the result of an insufficient secretion of thyroid, a disordered functioning of the pituitary gland, or defective activity of one or more of the other glands of the endocrine system, conditions which might be corrected if advice and treatment were sought early in the illness.

We have learned that such common conditions as neurasthenia, epilepsy and migraine, are, in some cases, the result of disorders of the glands of internal secretion. And as our study and knowledge of these hitherto misunderstood and abused conditions increases, we will then in reality be fulfilling our duties towards the prevention of disease.

At the present time in our State there is no adequate provision for the care of epilepsy. A few of them can be taken care of at the almshouse, but here the accommodations and hospital facilities are far from adequate for coping with the problem as it exists in our State. And there is no medical problem today that is more distressing for the sufferer, for his family and the public, than is that of epilepsy.

Rhode Island has made an excellent start towards the solution of the problem of its feeble-minded, and yet how many of us realize that we have as yet only scratched the surface of this important problem. We need an expansion of our present institution for the care of the feeble-minded. There are, today, in this State, many cases of feeble-mindedness who have been examined and for whom institutional

care is most desirable, and yet our institutions' capacity is taxed to the utmost and these cases must wait, some of them a very long time, before they can be placed under proper care. We need appropriations sufficient to insure the most modern treatment of the mentally deficient already under state care, and to develop the work for the future.

The problem of illegitimacy is a very serious one with us and one which is in nowise decreasing, and will not, until we have a more adequate provision for the care of the feeble-minded mother. How can we hope to prevent the increase of feeble-mindedness and insanity until we effect the segregation of the feeble-minded mother?

Much excellent work has been done in our community along the lines of detection and treatment of the abnormal child in our schools. In fact, in Providence were established the first classes in this country for the defective children. And it would be difficult, in fact well nigh impossible, to measure what a tremendous economic saving to this State has been effected by the diagnosis and treatment of the mentally defective child in the schools. Here it is, of course, that the cases can be observed in their incipiency where special training can be instituted, where certain cases can be cured, others much improved, and certain others segregated, thus preventing these individuals becoming later neurotics and psychotics, delinquents and criminals. If a careful system of follow-up work can be instituted and carried out in connection with our present excellent school supervision, many of those cases, which are improved, could be followed and guided after they leave the school and their lives so adjusted that they might, at least, attain a partial degree of economic efficiency instead of drifting, like a ship without a rudder, into wrong companionship, improper industrial pursuits and vicious habits of health.

The mental hygiene of industry is today a problem which is very prominent in the minds of both the employer and the employes. When one consults the turn-over sheet of many a large industry, it is readily seen that the cause of the tremendous labor turn-over at the present time, while partly due to the social unrest, is also in a great measure the result of psycho-

logical difficulties, and it seems obvious to anyone with experience in disorders of the mind, that individuals who have been hired and fired a dozen times a year for such causes as are recorded on the turn-over sheet of industry, as, "unwilling to work under supervision", "suspicious of fellow-employee", "unable to concentrate upon work", "exaggerated ideas of importance", all constitute definite psychological difficulties that are problems for the specialist rather than the employment bureau.

A study of the problem of fatigue, of types of work suitable for women and children and many of the other problems relating to modern mental hygiene, would be of the greatest value in increasing the efficiency of the worker and lessening the problems of the employer.

It seems obvious, therefore, that the establishment of mental hygiene centres throughout the community, would offer to the public a place where the problems of the cases of incipient nervous and mental disease could be brought, from which public education regarding the understanding of mental diseases could be disseminated, where policies as to the modern methods of treatment could be worked out and where the needs of our institutions could be brought before the public without the accusation of self-seeking. Here the employer and employee could come seeking a solution of the hiring and firing problem, to such a centre the schools might refer cases presenting unusual problems, or those going out from under their control.

There is much work to be done in our State, and work that if thoroughly done will decrease manyfold the nervous and mental invalids in our midst, will increase the efficiency of our schools, bring about greater production in our industries, and lessen crime and delinquency. All this cannot be done at once, but we have made a beginning, and we must count upon the whole medical profession to see to it that the dawn of a new era of mental and nervous health is brought to every corner of our State.

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EDUCATION AND RECREATION IN THE ARMY.*

By MAJOR GENERAL WILLIAM G. HAAN.

Assistant Chief of Staff, and in charge of education and recreation work in the Army.

That education and recreation as applied to the new Army has passed the experimental stage and is now a vital factor in the training of the soldier was shown at a convention of Army educational officers, held at Camp Zachary Taylor, near Louisville, Kentucky, on December 9, 10 and 11.

Early in the year, the War Department, actuated by a deep sense of responsibility, felt towards the millions of men brought into the service during the war, as well as by the astounding facts as to illiteracy and physical condition of the young men of the country as shown by draft statistics, and the excellent work done by the Commission on Education and Special Training, had conceived an army built up on a new plan. It was proposed to make the army not only a military force to be trained and ready in time of national emergency, but a great educational institution where young men of the best mental, moral and physical conditions, and with the highest ideals of patriotic citizenship would be produced.

This plan was realized, in a measure, when the Congress appropriated the sum of \$2,000,000 to be devoted to this purpose during the fiscal year 1920. Accordingly, in September of this year instructions went forward to the commanding generals of all divisional camps and of territorial departments, who at once appointed on their staffs, officers known as Education and Recreation Officers to assume direct charge of the work. Each officer has associated with him at least one civilian expert in educational affairs, who furnishes assistance and advice in establishing schools and manual training classes.

But it remained for the Camp Taylor Convention, called by the Secretary of War in order that the work in general might be co-ordinated and rough places smoothed out, to show that the army is now in reality a great

*Authorized by the Office of the Assistant to the Secretary of War; Service and Information Branch.

training school where the mothers of our young Americans will be glad to see their boys go. This idea of the army as a vast university in khaki is admittedly hard to conceive, but nevertheless the thing has been accomplished right before our eyes.

No longer is the army merely concerned with the making of a recruit into an efficient fighting man, by giving him the prescribed system of military training only for a few hours of the day and leaving him almost entirely to his own resources for the remainder of the day. It now assumes responsibility for the entire twenty-four hours of his day, and sees that every portion is gainfully spent in useful study or helpful recreation. In the soldier's life, education and recreation now have equal places with military training, and are definitely scheduled in the program of daily work.

All training, whether purely military or educational, has as its main object the development of the soldier's mind to make him a responsible thinking human being. Every soldier, however poorly he may be educated, or however limited his experience, has still a thinking mind, and that mind is active practically all the time. Such a man is perhaps incapable at the moment of looking at affairs in a broad sense, but the object of all training must be to guide that mind in the direction of right thinking. In order to accomplish this the instructor himself must be able to estimate about what are the channels of thought in the mind of the men being trained, in order that he may so conduct his own part of the work as to gain the confidence of the men he is instructing or leading.

In developing the soldier's mind the most rapid progress is made by placing upon the man, as early as practicable, as much responsibility as he can stand. This placing of responsibility on the man stimulates his pride, raises his self-respect, and urges him to better effort. This is applicable in all kinds of training. It is character building, frequently called moral training, and the most effective means of stimulating self-development.

Every soldier, down to and including the last recruit, will sooner or later become a leader in a smaller or greater sense. In battle, as battles are now necessarily conducted, direct responsibility very frequently goes out of the hands of

the officers, and small groups of men must accomplish objectives by themselves; hence leadership must be assumed by some or all of these men. Any one of them may be placed in a position where he must act independently and make his own decision on his own responsibility, which requires thinking and acting on his own judgment. It requires leadership. And it is to develop these latent qualities of leadership that this educational programme has been inaugurated.

New recruits are inclined to look on their officers from the very beginning with respect and as thoroughly conversant with their duties. It is very important that this natural impression should be maintained and improved, but this cannot be done unless the leaders are in the habit of thinking correctly and justly in all matters, and acting accordingly. This is necessary to gain and maintain the confidence and respect of the men. When it has been fully accomplished, then most of the small difficulties disappear. There will be a high state of morale in the command, and wherever we find a high state of morale we always find a high state of discipline, instruction and consequent usefulness.

Officers of our future armies will be required not only to be thoroughly trained in a professional sense but must also have that human quality which comes only through a real interest felt for the welfare of the men under their command. They must not only be military instructors to the men, but also their leaders in all sports and recreation. Experience of the larger colleges and universities has shown that a certain amount of sport and recreation is a necessary part of the student's life, and as the army is now a great university in every sense of the word, and each man composing it a student, recreational activity will be a part of its training. Here the army chaplain enters as an important factor in the handling by military means alone of all the camp activities formerly furnished by the Y. M. C. A., Knights of Columbus, etc., and the Americanization of aliens in the army.

Under the system of education now in force it is possible for men to receive instruction so as to fit them to be carpenters, blacksmiths, pharmacists, dental assistants, engine workers, mechanics, draftsmen, stenographers, truck

gardeners, motor drivers, repair men, telegraphers, radio and telephone operators, etc. Such educational subjects as English, geography, mathematics, United States history and modern languages are also taught. Of course, at the present stage of the game it is not possible to give instruction in all subjects at any one camp or post, but so far as practicable, the desires of the enlisted man as to the courses to be taken by him will be met.

A certificate will be given by the local commanding officer or school officer to each man who successfully completes a course, indicating that he has satisfactorily completed the course studied. A standard War Department certificate will later be adopted, and the possession of such a certificate by a soldier who has been discharged with a character of "Excellent" will be sufficient recommendation to a civilian employer as to the qualifications of the discharged soldier for employment.

On the other hand, it is highly important that the men themselves take the thing seriously and realize that the Government is concerned not only in making trained soldiers of them, but also making of them self-supporting and self-respecting members of the communities to which they will return on discharge.

This work is unique in the history of the Government, and highly important in showing the trend of the army in facing the new problems developed by the World War. It will result in making the army in time of peace a more valuable factor in the life of the Nation by producing men of best possible type, having a good general education, possessing a useful trade, but, above all, thoroughly trained in moral character and the duties and responsibilities of good citizenship.

AMERICAN PROCTOLOGIC SOCIETY. Twenty-first Annual Meeting.—Memphis, Tenn., April 22 and 23, 1920.

PROGRAM.

Annual presidential address, "Co-operation and Co-ordination." Collier F. Martin, Philadelphia, Pa.

1. "Post-operative Treatment of Fistula, with Special Reference to the use of Gutta-Percha

Tissue." Alfred J. Zobel, San Francisco, Cal.

2. "Some Aids in the Record Keeping of Ano-rectal Cases." Ralph W. Jackson, Fall River, Mass.

3. "Standardization of Hemorrhoid Operations." Louis J. Hirschman, Detroit, Mich.

4. "Personal Experience in the Treatment of Internal Hemorrhoids." Alois B. Graham, Indianapolis, Ind.

5. "A Virulent Infection of the Colon by the Colon Bacillus." Jerome M. Lynch, New York, N. Y.

6. "Pleuro-colonic Fistula." Frank C. Yeomans, New York, N. Y.

7. "Reflexes Due to Rectal Diseases." William M. Beach, Pittsburgh, Pa.

8. "Pre-operative Treatment in Rectal Surgery." William H. Stauffer, St. Louis, Mo.

9. "Local Pain and Other Symptoms Associated with Infections of the Anal Tissues." Granville S. Hanes, Louisville, Ky.

10. "The Recto-vaginal Septum in Proctology." Descum C. McKenney, Buffalo, N. Y.

11. "Disabilities Due to Intestinal and Rectal Diseases in the Young Soldier." William H. Axtell, Washington, D. C.

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EDITORIALS

POST-GRADUATE WORK IN LOCAL HOSPITALS.

In a number of states there have been established through the efforts of the American Medical Association, post-graduate courses of instruction for the profession at large, conducted by the staffs of established hospitals in the respective states. Such a movement has made little or no headway here in Rhode Island for very obvious reasons, chief among them being the

fact that none of our hospitals are teaching hospitals or connected with medical schools. However, it now seems probable that some plan suitable to our needs and applicable to our hospital resources will be offered the physician of the state, in the near future. A committee of the Rhode Island Medical Society, working in conjunction with the American Medical Association, has formulated plans whereby the clinical material—medical as well as surgical—of the hospitals may be placed at the disposal of the whole medical profession for study and mutual advantage.

Naturally, the success of any plan along this line is predicated on two features—the willingness of the staffs of the hospitals to hold clinics at definite times, and the attendance of physicians not officially connected with the hospitals at such demonstrations. Of the two, the latter is unquestionably the more essential to the success of the plan, for the operations, the medical ward visits and the laboratory technique will be going on regardless of outside attention.

It is, therefore, essential that the profession show its interest in this project by attending the clinics frequently and as regularly as possible. The advantages accruing to the visitor is evident, and no less to the staff member who is put upon his mettle to provide a good clinic, have his material well in hand and to be "up" on his subject.

A CHILDREN'S HOSPITAL.

It has been recognized for many years by physicians and surgeons whose hospital affiliations permit them to treat children in our institutions, that there is a need in this state for a hospital devoted exclusively to children. Many of the diseases peculiar to childhood are better treated in a special hospital of this character. The spirit underlying the general hospital, while perfectly proper as far as the treatment of adults is concerned, is not best suited for dealing with the special problems of childhood. This is amply borne out by the experience in other states where special hospitals for children have been established.

It has remained for the laity to recognize the urgent need of such an institution. One of our local hospitals has lately received generous donations from three different benefactors, the income from which is to be devoted exclusively to the use of children. These bequests are to be used mainly to meet special needs, but they serve to show the interest of the general public in the proper care of children who are confined to hospitals.

The will of one of the state's wealthiest citizens, recently filed for probate, provides for the establishment of children's hospitals in this state and in other states of the union, in the event of certain remote contingencies being brought about. These conditions may never be realized, but the interest of the testator in bettering the

conditions of child-life is apparent. Medical men can have great influence in shaping public opinion looking to the ultimate establishment of such an institution.

RECIPROCITY.

An increasing demand is being made for some method by which a physician, after once taking the detailed examination necessary for his license to practise medicine, will not be required to prepare himself for a similar examination, if circumstances arise compelling him to change his residence. The details of the fundamental sciences of medicine, especially of anatomy, physiology, pathology and *materia medica*, are so many and so difficult to retain, that after a man has left the atmosphere of the medical school for the field of general practise or of his specialty, it is at times impossible for him to study and retain these minute details sufficiently long to transfer them to the examination paper.

Reciprocity would, of course, obviate the necessity of a physician ever being compelled to submit to the drudgery of the preparation for another examination, if reciprocity were national and uniform and if the requirements for licensure were the same in all states. Unfortunately this is not true and for this reason the states that have adopted some definite standard for the licensure have not looked with favor upon reciprocity with states of lower standards. It is manifestly unfair to grant a license to a man who may have a diploma from a medical school which gives him his course in two or three years without requiring any premedical training and to give the same privileges to the man who, as in this state, must graduate from a recognized medical school and must have had, in addition, at least two years of premedical training and at least one year of service in a hospital.

The Federation of State Medical Boards has suggested a method which seems to promise a solution to this difficult problem. This organization is made of representatives from the licensing boards of the various states. At its annual meeting, just held at Chicago, the president advised the adoption of Interstate Endorsement. This means that, if a physician in Colorado wished to secure a license in Rhode Island, he would submit his credentials to the Rhode Island authorities through the proper authorities in his own

state. If these credentials show that he has fulfilled the requirements as to preparation and education in Rhode Island, then he would be endorsed by the Rhode Island authorities and a license would be issued to him without examination. This method might be called individual reciprocity. It would soon tend to elevate the standard in those few states that now encourage and foster the institutions of low rank and make a uniform standard for the whole country. Just so long as there are states that tolerate the lower standards, there will be states which will refuse to recognize general reciprocity. Therefore the method suggested seems to offer hope for the solution of a problem that works hardship on the physicians who may, from force of circumstances, be required to move from their usual fields of practise.

THE USE OF THE WORD INFLUENZA.

A recent issue of the Illinois State Health Bulletin bears on its front page a picture, which shows a bowl plainly marked Influenza. The fumes arise from the bowl into three clouds marked Pneumonia, Tuberculosis and Death. Around the side of the bowl are labels so arranged as to camouflage the name influenza, and bearing the titles Coryza, Bad Cold, Bronchitis, La Grippe, etc. The cartoon bears the caption "A rose by any other name would smell as sweet."

It is time indeed that the public should come to learn that most so-called colds, grippe and acute coughs, are in reality mild cases of influenza and as such may be a source of infection.

Many laymen have made an arbitrary division of the acute naso-respiratory infections, in order of severity, as follows, cold, grippe, influenza and "flu." The feeling seems to be that the ordinary cold may be entirely disregarded, grippe may call for home medication or at most a counter prescription, while "flu" should be regarded in such a way that the whole household and perhaps the immediate neighborhood will soon be in a state of hysteria. Of course the slang term "flu" should be entirely discarded by both the physician and the public. The term influenza might well be used freely to diagnose all the acute epidemic naso-respiratory

infections, especially when accompanied by fever. This teaching would tend to give the public more respect for the milder types of influenza and would undoubtedly tend to decrease the sequelae, which while less fatal than in the pandemic of 1918 are certainly more frequent as regards incapacity for a long time. Whether it will be shown that we dealt with a new disease entity in 1918, or that the true causative agent of influenza is not yet known, the conservative point for the layman to realize is, that all so-called colds, grippe, etc., with fever, are in fact attacks of influenza varying in intensity, and that influenza is not to be considered lightly, or disguised by other names, on account of the varied types of its sequelae.

ENDOW THE MEDICAL LIBRARY.

Every member of the Rhode Island Medical Society whose will contains provisions for public bequests, should not fail to remember the Library. In many instances the holders of bonds have been generous in surrendering them to meet the constantly increasing expenses of the institution. We should, however, make provision for the future. Those of our number who have prospered should esteem it a privilege to remember the Society in their wills, and needless to say, small contributions are as gratefully received as large ones. It should be a matter of pride that the Library, which has contributed so largely to the success of the profession in this state, be not allowed to suffer for want of funds in the years to come.

ENTER THE GENERAL PRACTITIONER.

The first sentence on the first page of a recent book by one of the greatest living contributors to medical advance, Sir James MacKenzie, reads as follows: "The progress of medicine will be hampered and delayed until the general practitioner becomes an investigator". With the development of specialization in the various branches of our art, on all sides has been heard the question "What is to become of the general practitioner, the old fashioned family physician?" And among the cognoscenti the feeling has been growing that the picturesque old fellow has outlived

his usefulness and is fast becoming but a sort of general adviser or social worker among his patients, leading them tactfully from the office of one specialist to another to be intricately and elaborately diagnosed and treated. But now comes our eminent British colleague saying, "Friend, go up higher"; indeed, he summons the family doctor to the place of honor in the front rank of the workers against disease.

Dr. MacKenzie's main contentions are these. First that to the general practitioner alone comes the opportunity of studying the early stages of disease, the time when the patient presents symptoms rather than physical signs and the only time when accurate diagnosis and treatment can prevent the occurrence of dangerous illness. Second, that the general practitioner, more than any other, can follow the development of disease through all its stages during a period, it may be, of ten, twenty or even thirty years, and can by careful observation and records fill in many of the gaps in our knowledge. The experience gained by long and accurate study of this sort means a high degree of skill in determining prognosis, a matter of the greatest importance to the patient. In his recent article on the "Future of Medicine" in the "Oxford Loose-Leaf Medicine", Dr. MacKenzie reiterates these views and states his belief that not in the laboratory nor in the hospital ward, but in the domain of private practice and in the out-patient clinic, lies the hope of the most rapid medical advance.

The lesson to the family doctor is plain. Armed with a good preliminary training in the scientific branches and a clear conception of the work of the specialists, he must cultivate accuracy in observing symptoms, studying and recording each case with conscientious care, and from time to time correllating his observations and conservatively attempting to draw conclusions. Then he must follow his cases, recording every evidence of progress of the disease and the apparent affect of therapeutic measures. In this way his records will eventually become not only of interest to himself but when he has studied them, critically correllated and analyzed them, and published the results, of definite value to the world at large.

SOCIETY MEETINGS

RIHODE ISLAND MEDICAL SOCIETY.

Quarterly Meeting, March 4, 1920.

The regular quarterly meeting was held March 4, 1920, at the Medical Library. In the absence of the President in the Orient, the meeting was called to order by the First Vice-President, Dr. Jesse E. Mowry.

The minutes of the December meeting were read by the Secretary.

The presiding officer referred to the death of Dr. Frank B. Fuller, a former president of this society.

Program: Paper, "Posterior Positions of the Occiput and their Management," by Dr. H. G. Partridge in absentia. The paper was read by the Secretary. Discussion opened by Dr. Carver, who stated that in his experience, contrary to textbook statements, a large percentage of these cases do not rotate spontaneously and that manual rotation is more certain and permanent than instrumental rotation. A palpable anterior fontanelle usually means a malposition.

Dr. Appleton: Deformed pelvis is a frequent cause of posterior positions. Prophylaxis consists of early inducement of labor where pelvic measurements show deformity of the pelvis, such as the justo-minor pelvis.

Paper, "Analysis of 100 Deaths from Diphtheria," Dr. D. L. Richardson, Superintendent Providence City Hospital. Discussion by Drs. Lovewell and W. R. White. Collation followed. Adjournment.

J. W. LEECH, M. D., *Secretary.*

PROVIDENCE MEDICAL ASSOCIATION.

February 2, 1920.

The regular monthly meeting of the Providence Medical Association was called to order in the Medical Library by President Dennett L. Richardson at 9 P. M. on February 2, 1920.

The records of the previous meeting were read and approved.

The applications of Drs. Paul Cook, Hilary Connor and Parker Mills having been approved by the Standing Committee, a motion was passed instructing the Secretary to cast one ballot for their election.

The President announced the appointment of Committees as follows:

Collation Committee: Dr. Herbert L. Harris and Dr. Nat H. Gifford.

Publicity Committee: Dr. Roland Hammond, Dr. M. B. Milan and Dr. William O. Rice.

The paper of the evening entitled "Clinical Neuro-Pathology and Its Value to the Practitioner" illustrated with lantern slides was read by Dr. Frederic J. Farnell.

Dr. Farnell's paper presented Neuro-pathology from the functional and experimental points of view. Accepting the importance of organic pathology in the past, he showed that the future progress in Neuro-pathology depended upon work along these lines of function and experimentation, points of view which relate to individual physiology and psychology.

He illuminated many nervous manifestations in endocrin disorders and spoke of endocrin symptoms in nervous disorders. He emphasized synthesis in contrast to analysis and built up from the point of view of endocrinology physical types and explained their function as individuals. He showed many lantern slides illustrating their physical types and showed how much knowledge could be learned from a Neuro-pathological study of these so-called "misfits". Throughout his paper he emphasized the importance of the individual as a functional unit, not pathology en masse.

The discussion was opened by Dr. Charles A. McDonald and closed by Dr. Farnell.

Dr. Richardson appealed to the members for more reports of cases and presentations of specimens.

Dr. Richardson announced a Committee to draw up a memorial on the death of Dr. Frank B. Fuller at an early date.

Meeting adjourned at 10:10 P. M. after a short rhyme by Dr. William R. White.

Attendance twenty-eight members and two guests.

RAYMOND G. BUGBEE, M. D., *Secretary.*

MEMORIAL TO DR. FRANK B. FULLER.*

Mitchell, Hersey, Fuller, names to remind us that our brothers, honorable beloved physicians of their generation, are one by one passing on,

and that we are conscious of a loss with the going of each, loss to our profession, our association, our comradeship, our community.

Dr. Frank Boutelle Fuller was one of our best men, and our sorrow when the unexpected tidings of his decease came to us was deep and universal, for all who knew him held him in highest regard.

He was born in Wilton, Maine, August 28th, 1853, graduated at Bates College, 1875, and the Harvard Medical School 1879. Was interne in Dr. Richardson's Lying-In-Hospital in Boston, and later in the Rhode Island Hospital. Began practice in Pawtucket in 1881 and continued there until his death from heart disease, on January 23, 1920. He was secretary of this Association for one year, in 1884-5, and its president for one year in 1893-4.

How briefly told is this outline of Dr. Fuller's life and how truly we who knew him read between the lines, of a life full, rich, splendid. While it was not for him to gain the popular distinction of the great soldier, the statesman, the jurist, the preacher, it is our belief that no higher, grander service exists than that rendered by a faithful, kind physician to his fellow men.

Dr. Fuller was a citizen of the highest type, loyal to his native State, his city, his country, and the volume and quality of his public services can not be told in words. His patriotism during the late war led him many times to work beyond his strength.

Let us recall that it was Dr. Fuller who solicited and collected our contributions of instruments and supplies to aid the impoverished physicians of Belgium.

Again, it is safe to say he possessed the best attributes of a real physician. He was kind, honorable, intelligent, faithful. He was progressive and in touch with modern advances in medical practice, and yet was conservative and thoughtful in estimating and accepting unproven innovations in the treatment of disease. True it is he was greatly beloved by a very numerous clientele. He was a Mason, a Republican, an Episcopalian, but best of all he deserves the title of good physician.

Of Dr. Fuller, the man and friend, it is indeed a pleasure to speak. Most equable his temperament and manner; always genial and

*Read before the Providence Medical Association, March 1, 1920.

cheery; kind and cordial, a companion to be sought and cherished.

Many of us have enjoyed his delightful hospitality, and recall his pride and pleasure when he first welcomed us to the home of his own building.

Of his life within that home it is ours to speak with guarded thought but we rejoice that he was rich in the joy and blessings incident to a most happy family life.

Recently his daughter wrote these words to the writer of this memorial, "Father was always an inspiration to us". Happy indeed and thrice blessed is the man at three score years and seven of whom his children think and speak like that, and happy the son or daughter who has the example and association of such a father.

As for us let us review his life's record, profit by his unobtrusive but uplifting influence, and while we miss the familiar form now resting amidst the silence and beauty of Swan Point near the bank of the Seekonk, let us cherish his memory, think of him as a friend to be trusted once and always, rejoice that his life was so useful and happy, that two generations of children knew his tender love, that no crushing sorrow left its shadow on his life, that his last hours were painless, and that, in our certain belief, all is well with him now and ever more, for

Who more deserves eternal rest
Than he who does on earth his best;
Men's lives who brightens and uplifts,
Transmitter he of Heaven's gifts.

WILLIAM R. WHITE, M. D.
CHARLES H. FRENCH, M. D.
Committee.

BOOK REVIEW.

THE HEALTH OFFICER. By Frank Overton, M. D., D. P. H., Sanitary Supervisor, N. Y. State Department of Health and Willard J. Denno, M. D., D. P. H., Medical Director of the Standard Oil Company. Octave of 512 pages with 51 illustrations. Philadelphia and London: W. B. Saunders Company, 1919 Cloth, \$4.50 net.

During the last few years there have been published several very excellent manuals for

health officers. This is the latest and one of the best. The authors have had an extensive experience in local and State work in New York under Dr. Biggs. The field of public health has broadened enormously since the time when the health officer was thought of chiefly as a chaser of bad smells. The authors are up to date and have an excellent perspective of the different phases of health work. Naturally most of the book is taken up with the contagious diseases, but sufficient attention is given to sewage, water, household wastes and nuisances to enable the local health officer to understand them. The advice about nuisances and household wastes is very sensible and practical. The modern view point is illustrated by the fact that there are chapters on Venereal Disease Control, Vermin, Mental Defects, Food Values, Industrial Hygiene and Camp Sanitation. The chapter on Ventilation embodies the results of the latest researches which have demonstrated that bad air is bad because of its physical properties, stagnation heat and humidity, and not because of chemical poisons. The chapter on immunity is easy to understand which cannot be said of much that is written on that subject. Every health officer should have this book.

C. V. C.

LETTERS

TO THE EDITOR—

The *Los Angeles Times* in a recent editorial said, "Fifty years ago many land owners sold valuable farms in New England to buy cheap acreage in California. This year their children are selling lands in California to buy cheap farms in New England. Just a natural ebb and flow of land tides or as Tennyson expresses it 'that which drew from out the vasty deep turns again home.'"

But this is not all the truth. California is full of men passed middle life, farmers from the West, who have acquired what seems to them a competence and seek to end their days in a more equitable climate, men from the East retired from active business, seeking greater creature comforts and less responsibility, superannuated teachers and professional men hired by tales of competence from its fertile soil, and the majority look forward to owning

an orange grove, a nut ranch or chicken farm from which they can pluck a comfortable living while resting peaceably in the sunshine.

Sooner or later they purchase a farm or ranch and begin operations and later they nearly all experience the same result.

Ranching except on a large scale and with unlimited capital is but a repetition of earlier struggles to gain a livelihood, exactly that which they were hoping to avoid.

If new land is opened, there is the question of irrigation, the discomforts of heat, of sand-storms, isolation from neighbors and lack of the conveniences to which they have been accustomed. There is the possible failure of crops, the increasing costs of fertilizers and the unceasing fight against pests and plant diseases, and when after years of as hard work as they ever did in their life, they have a crop to sell, an added source of trouble arises in satisfactory merchandising of their products.

So there must be added to the statement in the *Times* the proviso that they are going back to the East if they can find a purchaser for their California properties.

The daily press of this State contain page after page of advertisements of five and ten acre farms for sale. The same is true of Florida, and the really successful crop of each State is the tourist.

Los Angeles in the last census claims 250,000 tourists and admits that during the year there have been stolen in that city 780 automobiles, in value a million and a half dollars, a close second to the robberies perpetrated on the tourist population.

This question of irrigation is most important and unfortunately not yet thoroughly understood. The water rights are inherent to the soil and although purchased by the prospective farmer as shares, they cannot be sold independently of the land, and with as yet an imperfect system there is frequent clashing of interests and oftentimes an unsatisfied demand for water.

An unprecedented dry spell affects an entire area and the need of water is felt by all, but those who are forehanded in their requisition get so many acre inches on a specified day while others are sure to suffer with consequent detriment to their crops.

The water is supplied for 24 continuous hours

and every field is tilled and graded so that the water will cover so much acreage of surface or by means of gates at some depth. There are varying ideas regarding both the amount of water and the frequency of irrigation and the chances are the tenderfoot farmer is on the wrong side of both factors.

One form of investment is to buy unimproved land at from one to two hundred dollars an acre and rent it to ambitious farmers who have not the necessary capital to buy outright. Such lands in favored localities rent for \$45 an acre and will soon pay for themselves and in five or six years when the tenant has become discouraged and left for the East, you will have a valuable property to sell to the newcomer, for there is a sucker born every minute. I am credibly informed that scores of successful real estate brokers have adopted this plan to their very great advantage.

Catalina is one of the best advertised features of California and at this time of the year one of the most disappointing.

The island, 27 miles from the mainland, is practically owned by Wrigley of chewing gum fame, and aside from the charms of mountains and sea has one of the best hotels in the State, but for me give me Block Island every time.

On paper there is excellent fishing but the fish don't bite and the vaunted sea gardens are incomparable with those of Bermuda or Nassau. Three days of quiet on the island sufficed to relieve the tinnitus acquired in noisy Los Angeles, and in turn Coronado, Santa Barbara, Del-Monte were visited with a few days stay in each. To my mind Santa Barbara is the queen of California resorts, although I recollect with fond memories one drive in San Diego which took us some miles into old Mexico at Tia Juana, where a Scotch highball assuaged somewhat the unpleasant experience with the roulette wheel. Tia Juana is wide open and what that means in Mexico is perhaps known to some of your readers. San Francisco like all California cities, is crowded with tourists and travellers for the Orient. Hotel accommodations are almost impossible. The city is teeming with business and more than any others, reminds us of the good old East.

Tomorrow we sail for Yokohama on the Tenyo Maru. We have not yet learned the

Japanese language, as there are some 18,000 words in common use, but we have already learned three. Hope to get a dozen more while en route as we sail in a Japanese ship.

F. T. R.

January 28, 1920.

TO THE EDITOR:

S. S. Tenyo Maru, February 3, 1920.

To-day has been a novel one, a week without a Monday. Yesterday was Sunday, February 1st, and to-day Tuesday, February 3rd. We crossed the 180° meridian at 9:12 this morning, and of course dropped a day from the calendar. If you remember your physical geography you will know the reason.

We have gotten so accustomed to ship-board life that it would seem strange to go on shore. Have now been on board twelve days and have six more before we reach Yokohoma. The days pass very quickly. Four of us congenial to whist, have a sitting at bridge every day at 11 o'clock, and to-morrow sixteen of us start a tournament which lasts three days. To-day started the week of games. They play base ball on the upper deck with netting all around, when there are deck sports. Japanese wrestling, sports for the children, dancing and moving pictures, and last night a baby was born on board. They took up a collection and netted the child \$80.00. We have breakfast at 8:30, lunch at 1:00 and dinner at 7:00, and at 6:45 we all meet in the lounge and have a cocktail, so our time is pretty well occupied and it passes very quickly. A number have been sick. Although we have met no storms the sea has been pretty rough, and yesterday and to-day we are ploughing over enormous rollers into which the ship plunges so as to bury her nose in green water, and for a ship of this size—20,000 tons, it is going some.

We had a nice day at Honolulu. Went first for an auto ride to the Pali, a precipice 2000 feet high overlooking the valley and sea, then to lunch at the Moana Hotel, where we had planned to stay a week before the change in sailing dates interfered with our plans, then for another ride to the Punch Bowl, an extinct volcano and then a stroll about the city shopping and then back to

the ship for dinner. We sailed at 9:30 at night and were at noon to-day about 3500 miles from San Francisco. Truly the Pacific is some ocean, for we have about 2000 miles now to go. If anything of interest happens before we reach port I will add to this letter and finish it at Yokohoma, after we have been on Japanese soil. It is difficult to write, the ship is pitching so and the writing room is pretty well forward where its motion is felt more.

February 6th. At noon to-day we were 1170 miles from Yokohoma and this has been a strenuous week. They organized a committee for deck sports, and unknown to me, I was made chairman of the Finance Committee and asked to take charge of two Bridge Tournaments, one for men and one mixed and I surely had my troubles trying to explain its methods of play and how to score, but finally I managed to pull it off, and then began the real pull. We are 230 saloon passengers and I organized a trio of girls as solicitors and one Jap, and canvassed the boat pretty thoroughly. The Jap got \$184 and the girls \$250. A percentage of this goes to the Jap, Seamen's Fund and part to the crew, musicians, motion picture operators, and deck stewards and the balance is put into prizes. We allotted \$40 to the children of the steerage. There are 164 of them between two and twelve years of age, and no more than a dozen have been on deck in two weeks. The seas have been running so high that everything has been battened down. It is some place, I tell you, to go down there and see them packed like sardines in a box, yet they are clean and there is very little sickness.

We had a very interesting exhibition of Japanese wrestling Wednesday night at 8:30. The deck space was prettily decorated with flags, with a ring in the centre of the deck covered by matting and on it a circle of sand bags making an enclosed space about fifteen feet in diameter. The object is either to throw your opponent or push him out of the ring. First there came a fellow dressed in Japanese costume with a queer pagoda hat tacked on his head by a series of string, in his hand a sort of paddle. He stood solemnly at the side of the ring and about thirty Japanese

sailors and stewards came in and squatted around the outside of the ring. Then a curiously dressed fellow with funny hair and face came hopping in and hollered a lot of stuff and bowed himself out. Then they called the contestants by two, with a lot of ceremony and jumping about, stamping their feet. They squatted on their haunches and glared at each other for a few minutes, then one would shout and slowly rise and walk to the side of the ring and take a drink of water and a little salt which he would throw on the ground, and slowly go back to his squatting position. Sometimes they did this three or four times and then suddenly with a yell they sprang at each other and the bout was on. Sometimes it was a draw but usually one or the other was thrown quickly, sometimes clear over his head, and sometimes clear into the crowd watching. After twelve bouts, each one announced in this peculiar way, they had a procession and one fellow jumped into the ring uttering weird cries and challenged the crowd of thirty. One of these entered and began a tussle. The loser was thrown out and new comers tackled the victor till he was thrown, and then this one took the place and challenged the others. It was rare good sport and kept every one interested for an hour and a half.

Last night we had a Leap Year Ball and in the dining room a Japanese theatre. You should see it. One fellow dressed up in a curious fashion. He took all the parts and acts throughout, with the necessary explanations, while one girl picks a Japanese banjo and continually utters weird cries. He was irresistibly funny with his outlandish gestures, and shrill cries, blowing water out of his mouth and bumping his head on a table, but the Japs never cracked a smile.

Wednesday was one of their feast days to celebrate the end of winter and we were invited to the dining room at 9:30 p. m. We sat at little tables and they served us a punch lemonade and cake, and great bowls of dried beans. As soon as a little speech had been made and responded to by one of the Americans they drank a cup of tea in which there was supposed to be placed one bean for each year of your life, to ward off

illness, and lost spirits, and then each one began to throw beans about to drive out the devils. They were used about as confetti is used at home and every one got well peppered.

There is one missionary on board whom everybody hates. He has four children, two pairs of twins, and they are not allowed to play or have any amusement but sit solemnly beside their father and watch him eat oranges, apples and bananas. He never gives them a thing but if they are good he allows them to throw the banana skin overboard. We have offered them candy and things to play with but they are not allowed to have any pleasure. While the beans were flying it was suggested we shell the parson, and a score of us with hands full of beans walked by him and I tell you he got a dose. I put my whole strength into the beans by the handful and every one hit his face. We practically threw him out of the room and to-day one of the ladies told him he was a damned sneak to treat his children that way.

February 8. To-night we had a Sayonara Dinner (good bye dinner) with an extra bill of fare and a concert afterwards with distribution of prizes for the deck sports which have been going on for a week. A young lady who is something of an elocutionist recited, some others sang, and there were two short speeches, one by a Jap and one by one of the passengers. All in all it was a very enjoyable time. The missionary I spoke about has been driven to the lower deck. He has moved his chairs there with his family and everybody is relieved. More money has come in and we have now an extra \$115 for the steerage children. It has been so stormy and rough that the steerage passengers have not been on deck. I did not realize that there were over 700 on board and 140 young children till I made a trip through the ship to-day and found them packed like sardines in a box.

February 9. To-day we had a lottery for the children. I put 120 white beans, ten red ones and five black ones in a box, and with all the passengers watching, we had the whole bunch of children file out of one side and across the C deck and each one drew a

bean from the box. The first three black drew \$10 each, and the next seven \$5 and the red ones \$1 and all white ones fifty cents, so they all got something and every body was pleased. At lunch to-day we sighted land after seventeen days of trackless ocean during which we sighted two other ships. I never before realized the vastness of the Pacific. We docked at 8 o'clock at night. The dock was covered with coolies waving Japanese lanterns and shouting like mad. We did not go ashore but watched the disembarkation of the Yokohama passengers and the 700 steerage. It is very cold. The streets are full of snow and after the hot weather we had at Honolulu it is very trying.

February 10. To-day we had our first experience in a really foreign land. At 9 o'clock we went ashore and took our first ride in a jinrikisha drawn by Japanese coolies who take you about very comfortably at a uniform dog trot. We rode about the city for a couple of hours and then had lunch at the Grand Hotel and at 1:30 took the electric for Tokyo, where we attended a reception and tea given the passengers by the President of the Steamship Company, Mr. Ansana. He is a multi-millionaire and has a wonderful place in Tokyo. It is built on a side hill and by a series of stairs you reach wonderful rooms with beautiful decorations and a big collection of curios. The house is wonderful and more so that it is built entirely without nails, every piece of wood being dovetailed. After we had seen the place, we were invited to a big reception, more of a ceremonial tea served in Japanese style by his daughter and granddaughters. They were very pretty and wonderfully dressed and served us tea in bowls with elaborate bows. It was a curious concoction, and looked like the scum you see on stagnant ponds. We tasted it but that was all. Then we went to the drawing room where they served tea and cakes and a punch made of Bacardi rum, and curious jelly wrapped in palm leaves. Cigars and cigarettes were served and then a Jap juggler gave a very good exhibition of slight of hand, and a native orchestra gave us some Japanese music. One played a sort of flute made of bamboo, another strummed on a long nickel

banjo with a little wooden shovel, and a third played a sort of zither about six feet long. They all squatted on the floor in a very uncomfortable manner and made horrible music, at least to our ears. They are very ceremonious and bowed to the floor to every guest. Then we took the electric train back to Yokohama and went on board ship which really seems like home to us now. There is a good deal of flu here and you see them everywhere with nose respirators on, bundled in heavy capes but with bare legs and wooden shoes. During muddy weather they wear wooden shoes with two projecting pieces of wood so that they go hopping about with a terrific clatter and little short hopping steps, very funny to see and more so to hear. Nobody of our party wants to live in Japan. The United States for me every time. To-morrow we go again to Tokyo to see the capitol and take a ride about the city which is nearly forty miles across and has over two million inhabitants.

As to-morrow is a native holiday, the birthday of an ancient Emperor, everything is closed, but Thursday we plan to stroll about the shops. Friday we sail for Kobe and Nagasaki, 1100 miles south, where we hope to find warmer weather.

We see by the papers that New England has had another blizzard and congratulate ourselves on not being there but we have suffered from the cold here.

F. T. R.

MISCELLANEOUS

THE LIBRARY TABLE.

THE HISTORY OF ST. BARTHOLOMEW'S HOSPITAL. By Norman Moore, M. D. London. C. Arthur Pearson Limited. 1918. Vols. I, II.

With these beautiful and imposing volumes Sir Norman Moore has crowned a life-time of work devoted to the study of the history of medicine. For thirty years he labored collecting the materials for his story of St. Bartholomew's Hospital in London, and as one reads his fascinating pages one cannot fail to participate in the reverence and admiration of the author for this ancient institution. Eight-hundred years are a very long time and yet through all these centuries St. Bartholomew's

has ministered to the poor, the sick, and the infirm, whether strangers or residents in the city of London. A king's jester in his early days, making himself liked by his witticisms and flattering talk, a man of lowly birth, Rahere decided to amend his life and to devote himself to the service of God. He determined to go to Rome, hoping by so laborious a journey to obtain complete forgiveness of his sins. He started at once and reached Rome. There he went to the places of martyrdom of the blessed apostles Peter and Paul, bewailing his sins and resolving to sin no more. He fell ill, and thought his last hour was drawing nigh. He burst into tears and vowed a vow that if he should be allowed to return to his own country he would there build a hospital for the recovery of the poor and would serve the poor gathered there, as far as he could, in all their needs.

One night on his way home he had a vision. A four-footed winged beast carried him to a high place whence he saw a deep pit into which he feared he might be cast and was terrified. A stately figure appeared to him and spoke good and consolatory words and cheered him. "Oh man", said the figure, "what would you do for him who in such danger helped you?" Rahere answered that he would do all he could. Then said the figure, "I am Bartholomew, the apostle of Jesus Christ, who am come to help thee in difficulties and to show thee the hidden things of heavenly mystery. Know that by will and command of the Trinity on high, I have chosen a place in the suburb of London, at Smithfield, where in my name thou shalt find a church and it shall be there a house of God, a tabernacle of the Lamb, a temple of the Holy Ghost. Know that of this work you shall be the servant and I the lord; do you do the part of servant and I will discharge the duty of lord and patron." With these words the vision disappeared.

And so it came to pass that on arriving home Rahere with the help and encouragement of the Bishop of London and of Henry I, the Norman King of the English, began to build the church of cut stone and immediately began also to build the hospital house at some little distance from the church. The hospital prospered. Kings, Bishops, Barons, men of high degree and of no degree bestowed upon it gifts of

money and land so that its revenues increasing, its opportunities for service were thereby enhanced until that royal robber Henry VIII. attempted to ruin it. But the people of London would not have it so and the King was constrained to return the hospital to the care and government of the City of London, under the patronage of which it continues to the present day.

In addition to the history of the hospital proper, Sir Norman Moore has written of those famous men who have worked within its walls, helping to make the medical history of London and of the world. Of the Elizabethan physicians, of William Harvey and his successors, of John Abernethy and the other surgeons there are interesting accounts. The reproductions of old charters with their quaint mediaeval writing and seals are simply beautiful. The work is dedicated by the author to St. Bartholomew's Hospital and we can think of no more worthy or acceptable gift than these monumental volumes from an illustrious son to the venerable mother who nurtured him.

SIR VICTOR HORSLEY. *A Study of His Life and Work.* By Stephen Paget. London. Constable and Co. 1919. Pp. 358.

To those who mourn the too early death of Sir Victor Horsley, and they are legion, there is at least one consolation—that he has Mr. Stephen Paget for his biographer. It is no easy task to write the life of a man of science, for such men by reason of their calling tread the quieter paths of the world, making no great noise. And while it would be not quite accurate to call Sir Victor Horsley a quiet man, yet we think few will deny that his assured claim to remembrance will rest upon his contributions to the healing art rather than upon his political and other activities.

To have determined by experiment the relation of the thyroid gland to the pathology of myxoedema and cretinism and to the general nutrition of the body; to have been instrumental in the prevention of rabies in England; to have advanced our knowledge of the localization of function in the brain; to have been the first who ever removed a tumor from the spinal cord and that successfully; to have been a pioneer in the operative treatment of trigeminal

neuralgia and of brain tumors—these surely are enough to confer scientific immortality. But they represent only a fraction of Horsley's work, for seemingly there were no limits to his interests and no end to his endurance. He fought against the use of alcohol, he fought for democracy in politics, and he fought what he regarded as the vested interests in medicine, always willing as Mr. Paget says, "to set aside his own interests for the whole-hearted, full-blooded pursuit of an unpopular cause". Like Charles Kingsley, whom in many ways he resembled, he succumbed to the thing he least feared. Kingsley wrote a panegyric in praise of the "brave North-Easter", and it killed him. Horsley was sure that a non-user of alcohol could undertake risks which other men could not; he exposed himself to the burning sun of Mesopotamia with the result that he lies buried in Amarah. The span of Horsley's life covers the period of modern neurology. When he came upon the scene the less surgeons saw of the brain the better were they pleased; when he left it, and largely through his labors, neurological surgery had attained to a position of eminence. Those who enjoyed Mr. Paget's Life of another great surgeon, Ambroise Pare, will be under a further tribute of gratitude for this biography of Sir Victor Horsley.

THE PHYSIOLOGY OF MUSCULAR EXERCISE. By F. A. Bainbridge, M. A., M. D., F. R. S. London. Longmans, Green and Co. 1919. Pp. 215.

This monograph of some 200 pages is a really illuminating account of the physiology of muscular exercise. It is an excellent example of that kind of physiology, now happily coming into vogue, which Dr. J. S. Haldane calls "new", although like so many other "new" things it is, in principle, very old. Its inspiration is Greek, that is to say, it views the organism as a unit, and considers the relatedness of one process to another in physiological activities. Professor Bainbridge does not shut the muscles up in insulated compartments and does not treat them as though they enjoyed a sort of splendid isolation. He links them up in his book as they are in reality, with the respiration, the circulation, and the metabolism of the body. A glance at his chapter-headings

gives evidence of this. He discusses the Sources of Muscular Energy; the Respiratory Changes during Exercise; the Output of the Heart during Exercise; the Blood-supply to the Active Organs during Exercise; the Arterial Pressure; the Passage of Oxygen into the Tissues; the Co-ordination of the Changes Occurring during Exercise; Training; Exercise at High Altitudes; the After-effects of Exercise; Effort Syndrome and Over-stress of the Heart.

Perhaps the most interesting of these interesting discussions is that upon the co-ordination of the changes occurring during exercise. Having described the adjustments taking place in the circulatory and respiratory systems during exercise, he goes on to say that if the exercise is to be efficiently carried out, something more than the mere existence of these adjustments is required. Some mechanism must exist whereby the activities of the muscles, the nervous system, the heart and the lungs are co-ordinated and linked together in such a way that the resources of the body are utilized to the best advantage and the body acts as a physiological unit. Then follows an account of these co-ordinating mechanisms that is replete with valuable information.

With respect of over-stress of the heart, the author does not believe that the heart possesses diastolic tone and hence the heart being unable to lose what it never possessed, loss of diastolic tone is not the cause of dilatation of the heart. The fatigued heart dilates not because its muscular wall yields more easily before the inflowing blood during diastole, but because its contractile power is weakened and only by dilatation can its contractile power be increased in accordance with "the law of the heart". The atonic heart dilates in order to develop more energy, since dilatation increases instead of lessening the power of the heart to carry on the circulation. Such are some of the results of recent physiological research as set forth in this valuable monograph which we commend to our readers.

J. E. D.

MEDICAL VETERANS OF THE WORLD WAR.

An Association of Medical Veterans of the World War was organized at Atlantic City, in June, 1919, at the time of the meeting of the

American Medical Association, and a constitution and by-laws adopted. About 2800 physicians have already joined and all others who are eligible are invited to join the society.

The constitution states that "The dominant purpose of this association shall be patriotic service. The objects of this association shall be: To prepare and preserve historical data concerning the medical history of the war; to cement the bonds of friendship formed in the service; to perpetuate the memory of our medical comrades who made the supreme sacrifice in this war; to provide opportunity for social intercourse and mutual improvement among its members; to do all in our power to make effective in civil life the medical lessons of the war, both for the betterment of the public health and in order that preparedness of the medical profession for possible war may be assured."

The organization of the society provides for state and local organizations wherever the members desire it, and in some states, such as Wisconsin, organization has already been effected.

It is desired by the national association that those who are already members meet together in larger or smaller groups, at the first convenient opportunity, and effect a local organization with a chairman and secretary, and also at the next meeting of the state medical society that a place be provided on the program for the Medical Veterans.

The organization of the society is based on democratic principles and it is hoped that the members who have already joined will take the initiative and organize their own state and local societies.

The national organization will assist by furnishing application blanks and copies of the constitution and by-laws, and, if desired, stationery.

The first thing to be done after organization of a state society is effected is to elect a counsellor to the general council of the organization, to represent the state society at the next annual meeting of the veterans at New Orleans on the first day of the meeting of the American Medical Association, April 26, 1920.

A badge or button for members of the society is being made and will soon be ready for distribution. F. F. RUSSELL, M. C., U. S. A., Secretary, Army Medical School, Washington, D. C.

FROM A CHILD'S TOY.

Just one hundred years ago Rene Theophile Hyacinthe Laennec, one of the pioneers of modern medicine, observing some children playing in the gardens of the Louvre, listening to the transmission of sounds along pieces of wood, conceived the idea of utilizing this method for listening to breath sounds in examining a patient's lungs. He went home, fashioned a tube by rolling up some glued paper and then experimented with this in his ward at the Neckar hospital. From this incident in the garden dates the modern "stethoscope," an instrument well nigh indispensable in the modern practice of medicine.

The early stethoscopes contrived by Laennec, were unlike those generally in use in this country at the present time, for they were constructed to be used by one ear only. Nevertheless the original Laennec type is still widely used in European countries. To us, who are accustomed to the scrupulous cleanliness of everything about the modern hospital, it is curious indeed, to learn that the filthy condition of the patients in the hospitals in Laennec's time made it repugnant to physicians to listen to the sounds in the lungs by placing the ear directly on the chest of the patient.

Laennec gave his invention the name by which the device is still known, deriving the word stethoscope from two Greek roots, one meaning the "chest" and the other "to observe" or "regard."

In using the stethoscope the instrument should be placed on the bare chest wall. For this reason a satisfactory examination of the lungs can only be made when the patient is stripped to the waist. Careless physicians sometimes attempt to examine a patient's chest through the clothing. Such an examination is worthless. If you want reliable information concerning the condition of your lungs, do not go to a doctor who attempts such careless work. It is time and money wasted.

Dr. Laennec was born at Quimper in Brittany, on February 17, 1781, growing to manhood during some of the most troublous years in the history of France. He studied medicine at Paris, receiving his degree of doctor in 1804. He died on August 13, 1826, at the early age of 45, in the quaint old town in Brittany, in which he first saw the light.

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ORIGINAL ARTICLES

ANALYSIS OF 100 DEATHS FROM DIPHTHERIA.*

By DENNETT L. RICHARDSON, M. D.,
Providence, R. I.

In 1917 there were 12,453 deaths from diphtheria in the Registration Area of the United States which area includes 72.7% of the total population and if the death rate among people living outside this area was as high,—doubtless it was higher,—there must have been 17,114 deaths from this disease in the continental United States in 1917.

It is quite evident that diphtheria is still a great menace to child life, although we have flattered ourselves that the disease is being stamped out.

During the years 1895-1896 the use of cultures and antitoxin in combatting diphtheria was introduced into the larger cities of the United States. Immediately there was a sudden apparent increase in the number of cases. This was of course not true. It indicated that by the use of cultures many cases formerly not recognized were being diagnosed as diphtheria. In other words the diagnosis previous to this time was haphazard.

No matter how many cases of diphtheria a clinician may have seen, he cannot always pick out diphtheritic throats from physical appearance nor from the character of the symptoms. This is particularly true of the early diagnosis which is of so very great importance if we expect to cure patients. You and I were taught the classical picture of diphtheria and were led to believe that all cases must conform to this picture. No acute infectious disease always presents a typical clinical syndrome and the sooner medical students are impressed with this fact the better work will they do. As a

matter of fact, sore throats with or without exudate or pseudomembrane may be due to a diphtheritic process and may escape recognition unless cultures are taken.

Cultures should be taken of every sore throat especially if there is swelling or exudate. I wish to warn that many a physician has made the mistake of waiting for the report on the culture or depending on that one culture for a diagnosis. It is important to take cultures but it is also of great importance many times not to wait for the report before giving antitoxin; nor should it be withheld in spite of a negative report if the process is increasing and better judgment tells you that it may be diphtheria. Don't let the family nor your own inclinations argue you out of a tentative or positive diagnosis. Antitoxin is harmless except in very rare instances. From the year 1900 to 1917 the death rate in the Registration Area dropped consistently and gradually from 46 to 16.7 per 100,000. This drop is gratifying but it is by no means what it should be. As a matter of fact, about three years ago the virulence of diphtheria in Providence increased and I find, too, that in Philadelphia increased virulence was noted about the same time. It is quite possible that the mortality rate during the next few years including the last three will be higher than for many years.

Most physicians have been deceived in estimating the successful results of antitoxin by the great drop in fatality since its introduction. It so happens that cultures and antitoxin were introduced at the same time and a considerable part of the fall in fatality rate was due to the inclusion as diphtheria of many cases previously not included. This conclusion is further substantiated by the contrasted slow and gradual decrease in the total death rate.

Some interesting facts are revealed in the review of 100 consecutive deaths at the Providence City Hospital of patients suffering from faecal or naso-faecal diphtheria. Laryngeal

* Read before the Rhode Island Medical Society
March 4, 1920.

cases have purposely been omitted as they present a different problem.

The deaths will be reviewed from the standpoint of age, total duration of illness, duration of illness before admission, extent of the process and complications. Age is an important factor in prognosis.

THE AGES OF THE 100 PATIENTS:

Under 1 year.....	1	10 to 14 years.....	12
Under 5 years.....	43	19 years.....	1
5 to 9 years.....	42	20 years.....	1
31 years.....	1		

It is evident from these figures that few children die under one year of age. The highest mortality is from 2-10 years and practically all deaths are in children under 15 years of age. Adults do occasionally die.

The total duration of illness of these patients reveals some rather interesting facts.

TOTAL DURATION OF ILLNESS:

3 days or less	13		
4 to 7 days.....	30	43 first week.	
7 to 14 days.....	45	Second week.	
14 to 20 days.....	6	Third week.	

One each 21-23-30, 40 and 39 days respectively.

It is evident that about 90% of the deaths occurred during the first two weeks. The deaths are about equally divided between the first and the second week. In other words if a patient survives the two weeks period he is practically sure of getting well.

Clinically we observe two classes of cases. The first are those who are admitted in desperate condition and die during the acute process of the disease. The second group includes cases which are serious when admitted, but the local throat condition and temperature reaches normal and the patients seem to be surely getting well only to die near the middle of the second week from circulatory failure. The later deaths are usually in patients who develop extensive paralysis.

Very few of the patients had received antitoxin before admission.

DAYS OF ILLNESS AT THE TIME OF ADMISSION:

1 day.....	18	5 days.....	6
2 days.....	22	6 days.....	5
3 days.....	29	7 days.....	2
4 days.....	12	8 days.....	2

On each 10-12-21 days.

While the above figures were carefully taken from our records I do not believe that many patients die within 48 hours of the onset of the disease. Diphtheria is insidious in onset and children do not suffer from sore throat as do adults. They attempt to conceal it and since constitutional symptoms do not come on abruptly as in scarlet fever the parents overlook the condition and sometimes do not call a doctor until there is swelling in the neck, when it is perhaps too late. I find that parents under such circumstances do not know or conceal the date of onset when they are told the seriousness of the child's condition. The last table shows that 80% had been sick three days or less. It must be obvious to any one that early treatment is of paramount importance. Delay has been due to two factors, failure of the parents to call a physician and secondly failure of the physician to make a diagnosis and act promptly. If a physician is called to see a case of acute appendicitis he will not let the day go by without seeing that patient a second time if he does not recommend immediate operation. It is just as important to see a suspicious throat case a second time the same day and administer antitoxin if clinical findings warrant. If he does not go back for 24 or 48 hours he may have sealed that child's doom. Neither should he wait for cultures in the face of clinical signs, nor can he hide behind the alibi "The patient had negative cultures".

It so happens that antitoxin does not stop the process in all virulent cases even though it is given early. We once had a nurse who was given antitoxin a few hours after the onset of diphtheria, yet the process went on to extensive involvement and she barely escaped with her life even though large doses of antitoxin were given.

Practically all the antitoxin in this country is made from Park 8 strain. This organism was isolated by Dr. Park some twenty-five years ago from a diphtheria carrier. It is a powerful toxin producer but animals cannot be successfully inoculated with the organisms. It possesses virulence but not aggressivity. I do not know whether or not the criticism I am offering is correct, but I have felt for sometime that antitoxin is not accomplishing all that it should and have wondered if monovalent

antitoxin should be relied upon. For instance, in the case of epidemic cerebro-spinal meningitis, multiple strains are of so much importance in the preparation of serum. Meader of Johns Hopkins is working on the problem now and while nothing so far has been published his experience has rather borne out this contention.

It is of much importance to be able to predict when called to treat a case whether the patient will recover or die.

The extent of the process is of much value in making prognosis and oedema in the neck and throat is the very best guide.

OEDEMA OF THE NECK IN 100 FATAL CASES:

Unilateral oedema of the neck.....	18
Bilateral oedema of the neck.....	59
Small, moderate or no swelling.....	23

Seventy-five per cent. showed either unilateral or bilateral oedema on admission. Of the remaining 23, antitoxin failed to check the progress or the neck had been swollen before admission.

This oedema differs from swelling due to palpable glands or cellulitis seen in other throat conditions, has not been emphasized sufficiently. In a very virulent case I have seen boggy oedema as far down as the sternum and upper thorax. It develops rapidly and subsides rapidly, scarcely ever resulting in abscess formation.

These figures have confirmed a general impression which we have held for several years, namely, that any child under 10-12 years of age with marked bilateral oedema of the neck, when first treated, will die whether he receives antitoxin or not. We never withhold antitoxin and give such cases large doses. Once in a great while perhaps we save a life.

Another guide to determine the seriousness of the case is the rapidity of onset. If the throat shows very great increase in swelling and exudate within a few hours it is quite evident that you are dealing with a virulent infection, and prompt and sufficient treatment should be given.

In 40 per cent. of the cases the process was confined to the throat. In 60 per cent. the

process involved the nose. The prognosis in well defined naso-facial diphtheria is very high.

Death in diphtheria is usually due to circulatory failure. This is particularly well seen in the deaths which occur during the second and third weeks at a time when the acute symptoms have entirely subsided.

COMPLICATIONS OF 100 DEATHS:

Pneumonia	5
Myocarditis	40
Respiratory paralysis	1
Heart block	7
Acute nephritis	11
No complication	43
Paralysis	4

All those with no complications undoubtedly died chiefly from circulatory failure although myocarditis did not appear in the history.

STUDY OF THE URINE:

No specimen	40
Negative	14
S. P. T.	12
S. T. or more	34

Albuminuria early in the disease or at any time is less frequent than in many acute diseases. This is well shown in the table of fatal cases—only thirty-four cases out of sixty showed anything which would indicate an acute nephritis, and of one hundred cases only eleven showed urinary findings, which with the symptoms would suggest a diagnosis of nephritis. It is my own opinion that the signs in the urine are only secondary to the vaso-motor breakdown. Two cases with partial or quite complete suppression of urine came to autopsy. Macroscopically they showed no evidence of acute nephritis. I have not seen at the hospital a single case of general oedema in a diphtheria patient which would indicate an acute parenchymatous nephritis.

Contrary to almost all acute diseases diphtheria presents a falling temperature and pulse curve up to death. In fact, neither are so high as in other diseases, and the general tendency is downward whether the patient has had treatment or not. Many of the fatal cases enter with a temperature of ninety-nine or one hundred. Temperature is then of little significance; neither is rapidity of pulse. But

irregularity or marked slowing of the pulse is of serious importance.

PROGNOSIS: In determining prognosis one has to consider the rapidity of onset of the disease, the age and chiefly the amount of oedema, particularly in the neck. Any child under ten to twelve years of age with bilateral oedema of the neck when first seen will nearly always die. Death may take place during the acute process or after this has subsided and the patient seems to be quite recovered; but usually occurs within two weeks of onset of the disease.

TREATMENT: Antitoxin should be given freely to cases of sore throat whether you are sure of your diagnosis or not.

It should not be postponed many hours and certainly not a day or longer.

It should always be given either intramuscularly or intra-venously. In most cases the intra-muscular method is rapid enough, but in cases with swelling in the neck and marked signs in the throat, it should be given intra-venously and intra-muscularly. After intra-muscular administration antitoxin reaches the blood in considerable quantity in about eight hours, whereas when given subcutaneously two or three days are required. This fact may explain unsatisfactory results of the past because antitoxin has usually been given subcutaneously.

Antitoxin will not save all, even when given early, but the number of failures would be very small compared with the number who die each year from the disease under present conditions.

DISCUSSION OF DR. RICHARDSON'S PAPER.

DR. DENNETT L. RICHARDSON, Providence, R. I.—Patients do recover after heart block. We have one such occasionally. It does not mean that if the child develops heart block that he will die. If the heart is going to fail, it does not make any difference what is done. We have used everything in the way of stimulation, and I do not believe that anything is of avail. Just what the process is that goes on has not been established. The heart is depressed. This is due to the toxin

either of the heart muscle itself, or to the innervating mechanism. In addition to that there is very low blood pressure. The patients die may be hours, sometimes as long as twenty-four hours, after they have been pulseless. They die slowly. At autopsy there is only one characteristic finding in the organs. Every organ is perfectly pale, like that seen in pernicious anemia; not yellow but dull white. We have tried everything for supporting the circulation. We have tried pituitrin, adrenalin chloride, and digitalis but with no particular effect. When a patient begins to vomit, unless you can trace it to a medicine, or food, you can be pretty sure that you will lose the patient. We give them saline by rectum and keep them full of morphine. Stimulation has no effect. There have been some attempts to correlate the different types of diphtheria germs with virulence. As far as I know, the rapid onset of the disease and the extent of the process are the best indications of virulence. I have not looked up the virulence in other parts of the country. Last October, while I was in Philadelphia, I visited one of the hospitals and the superintendent told me that three years ago the mortality from diphtheria increased and the general run of cases was more severe. So I judge that high mortality is not only here. I have seen reports from one or two other places where the virulence has increased. It is happening now in spite of our modern methods of treatment.

The dose of antitoxin is rather variable. If a child has a little membrane on one side of the throat with a temperature of 101 or 102, 5000 units may be sufficient. If both tonsils are involved we usually give from 10,000 to 20,000 units. The initial dose is the dose most important. Whether you repeat it or not depends on the progress. If the disease is extensive it ought to be repeated, but it is the first dose that does the most good. In severe cases we give 20,000, 30,000 or 40,000 units, depending on the severity of the case rather than the age of the patient. To children two or three years of age we do not give quite as much as an adult. In those cases it is our practice to give a child antitoxin intravenously and intramuscularly at the same time. Then ordinarily we do not repeat it intravenously. How long

the antitoxin given intravenously keeps up its therapeutic process I do not know but anyway the intramuscular dose will reach the circulation in quantity in eight hours. After a lapse of twelve or eighteen hours you can repeat the intramuscular dose.

DISCUSSION OF PAPERS BY HERMAN O. MOSENTHAL, M. D., AND JAMES P. O'HARE, M. D.

(The papers are not available for publication.)

DR. FRANK T. FULTON, Providence, R. I.—I would like to repeat what Dr. Richardson has just said, that we are indeed fortunate in having Dr. Mosenthal and Dr. O'Hare present papers to us to-night. Each is an authority on the subject. They are not only internists but investigators and consequently their opinion has unusual value.

During the reading of the papers I have thought of a number of things which I might bring up in the discussion only to have the speaker later touch upon these particular things himself.

Dr. O'Hare has given a very clear exposition of essential hypertension, a condition more or less familiar to us all, and I am sure much clearer in our minds than previous to hearing his paper. He very properly emphasizes the fact that the diagnosis commonly rests with the general practitioner and if the cases are to be early recognized it must be through him.

It has been generally supposed, both by the laity and by many physicians, that if one has arterial hypertension, his expectation of life is comparatively short. I think it important to recognize that many of these cases live a long time if they are able to live under conditions which are at all favorable. There comes into my mind at this moment two patients who have been under my observation a long time, one of them for thirteen years, who, when first observed, had a blood pressure of 180 and who is still living and in fair health. Her blood pressure is now rather higher, as high as 220 s, 120 d having been observed. It is especially noticeable that she was only forty-five years of age when first seen, for in my opinion the younger these cases are the worse the prognosis. The other I first saw ten years ago when her blood pressure was 200. She is now about seventy

years of age and rather feeble on account of her arterial disease. Again, only to-day, a woman fifty-four, wife of a physician, came into my office with a history of having had, twelve years ago, haemorrhagic retinitis due to arterial disease. Her blood pressure now is 190 s, 100 d. She has some symptoms due to hypertension but on the whole is a very active woman. Still another instance, not under observation so long but probably of very long duration, is a patient whom I saw in my office once, four years ago, who had at that time a systolic pressure of 230, diastolic of 130. I had not heard of her since until the other day when she had her first cerebral accident. How long she had the hypertension before I saw her no one knows, but I venture to say a good many years.

Dr. O'Hare also spoke about the variability of the blood pressure in hypertension cases. I wish to emphasize everything which he said about that for I know it is not commonly understood how much variation may occur from day to day or, for that matter, from hour to hour. I see a good many cases of this type who have been under observation elsewhere for a longer or shorter length of time. Many of these patients ask to know what their pressure measures. If it happens to be five or ten points above the previous observation they are greatly depressed, if it happens to be five or ten points below they are correspondingly elated, it does not seem to me wise to make a practice of telling a patient his blood pressure. There are, of course, exceptions to this but unless there is some good reason for an exception I make it a rule not to tell a patient figures unless he has had figures told to him previously and I find it difficult to evade the question. The reason is that the patient draws his own conclusions from the figures rather than allowing his medical adviser to form judgment for him and give him advice accordingly. Patients who have hypertension would have much more comfort of mind and if handled properly would be just as amenable to treatment if figures were not given to them.

Dr. O'Hare commented upon an excellent method of recognition of alternating pulse. I think there should be a word of caution about that. The true alternating pulse is a pulse which alternates in force but which is evenly spaced. By listening below the cuff of the

blood pressure instrument one might readily confuse this with a pulse showing alternating ventricular extra systoles, this latter condition being rather more common than alternating pulse but easily recognized from it by the fact that the ventricular beats are not evenly timed.

DISCUSSION OF A PAPER ENTITLED "ACUTE NEPHRITIS IN CHILDREN."*

By LOUIS WEBB HILL, M. D.,
Boston, Mass.

(The paper is not available for publication.)

DR. HAROLD G. CALDER, Providence, R. I.—In the main I agree so thoroughly with Dr. Hill that there is not much opportunity for a discussion. On the other hand there may be a few additions or a few places where I can emphasize certain things he has indicated.

We ought to be particularly careful about prophylaxis. Remembering that throat infections constitute the largest cause of nephritis, we should be as careful in diet and treatment in acute throat infections as in scarlet fever. That is something that I think most of us are apt to neglect. We ought to omit the meat extractives and soups and eggs altogether. In other words, put the child on a nephritic diet before nephritis appears.

During the course of acute nephritis, I want to emphasize that an exclusive milk diet is not a good thing, as the protein intake is apt to be higher than is needed for that child. Starches and fats do not do the kidneys any harm at all. I never could see why we should cut down fluids to the absolute minimum amount in edema. I find in my experience that if we limit the amount of water to the child's thirst requirements we get along very nicely if there is no salt in the diet.

In regard to the tests, it seems that we ought to use caution. I think we can get along without any of them pretty well. The last one Dr. Hill mentioned about fixation of gravity is a valuable aid in the diagnosis of early chronic nephritis but in acute cases I should rather not use the test.

In the cases that do not do well, the first

uremic symptoms are poor appetite and vomiting. We get these before drowsiness or convulsions. I think that we are justified in using diuretics in those conditions unless the case is a very acute one. I should use diuretics derived from caffeine and tea.

In regard to the diagnosis, I think it is important to remember that there are some cases of acute nephritis which are comparatively blind until the urine has been examined. Most of us are apt to think of pyelitis in any case of unexplained temperature in a baby. In older children also we sometimes find acute nephritis when there has not been any special symptom except fever to call our attention to the condition.

DR. W. P. BUFFUM, JR., Providence, R. I.—It has been a great pleasure to all of us to hear Dr. Hill, especially as there has been so little work done on nephritis in children.

I am going to take the liberty to disagree on one point. There has been in the past, a good deal of confusion about the proper amount of protein for the diet in acute nephritis. It should vary a great deal in different types of cases and in different stages of certain cases. When there is retention of non-protein nitrogen in the blood, protein should be omitted from the diet as far as possible, and carbohydrate should be given liberally to spare the body protein. By this course, which must be given for only a short period, protein metabolism is kept at its lowest level, and the least possible tax is placed on the weakened function of the kidney. Also there is evidence that this lessens the likelihood of uremic manifestations developing.

The question then comes up as to when to use this extreme diet. I don't see any reason why we should not do either a blood nitrogen or a phenolphthalein test on a child when the severity of the case warrants it. In the absence of these tests, it is best to assume that any case with uremic symptoms has nitrogen retention. In cases where this retention does not exist, or in cases where it persists, sufficient protein must be given to meet the bodily requirements. Such a low protein diet sometimes causes or increases edema, and this must be kept in mind.

*Read before the Providence Medical Association April 5, 1920.

About salt in the diet, salt retention is probably the chief cause of edema and the salt intake should be reduced if this is present. This course alone will clear up the edema in most cases.

It has been found by Fitz and others that convulsions occur in certain cases where the nitrogen retention is slight and the chloride retention is marked, indicating that these so-called uremic manifestations may be caused by the failure to eliminate salt.

About the management of these cases after the more severe symptoms have subsided, it is a considerable problem to know what to do. Protein should probably be given in sufficient amounts to keep the hemoglobin up. I think it is well to keep the patient in bed for several months, if the albumin and casts persist for that length of time. Certain cases after showing little improvements for two months or so, will then clear up rapidly.

DR. HERBERT TERRY, Providence, R. I.—I should like to ask a question. Dr. Hill said that he has seen Edebohl's operation do a very good deal of good. He also said that he never has seen Edebohl's operation do any harm, and yet he advises Edebohl's operation as a very last resort. It seems to me that Edebohl's operation would be a very good thing to do before the patient reaches a moribund stage.

DR. ANTHONY CORVESE, Providence, R. I.—I would like to emphasize what Dr. Hill said in regard to the hemorrhagic type of nephritis. Three weeks ago I saw a young man of nineteen years with a cold, rhinitis and sore-throat. He also complained of bloody urine and some pain in both kidneys. He was not sick at all. I examined him and found some tenderness in the costovertebral angle on both sides. On examination I also found blood in two or three fields. I told him to go home and go to bed, put him on a diet, and had an X-ray taken. In three days he came back. I feel now that this was a case of hemorrhagic nephritis and I did not examine enough of the casts. His condition cleared up. I believe now that it was hemorrhagic nephritis. I should like to ask Dr. Hill's opinion on the etiology in that case.

DR. JAMES S. MOORE, East Providence, R. I.—I would like to express my appreciation on this

paper which informs me of the fact that the specific gravity seems to be highest in the night. I should like to inquire if the gravity is lowest in the afternoon. I have observed in examining urine that the gravity is lower in the afternoon. In these hemorrhagic types of nephritis of which I have run across several recently I have advised them to be put to bed and some, after a short time, seem to recover. After they get up they often have to return. In a few days the urine in the blood disappears. It occurs this way for several weeks, and I have inferred that there was little injury to the kidney itself as the children do not seem sick.

Dr. Hill has spoken about acute nephritis and its treatment. He did not mention whether he would advocate the removal of the diseased tonsils. I would like to know if he advises their removal and at what time he would advise doing it.

DR. FRANK T. FULTON, Providence, R. I.—I think the subject has been very well covered and discussed. I appreciate hearing this paper by Dr. Hill and I know that you all have enjoyed it. I think that most of the points that I had in mind have been covered in discussion. I feel as Dr. Hill does in reference to the functional test. They certainly have a value.

POSTERIOR POSITIONS OF THE OC- CIPUT, AND THEIR MANAGEMENT.*

By HERBERT G. PARTRIDGE, M. D.,
Providence, R. I.

One of the most important conditions in obstetrics, and one which has not received the attention which it deserves, is that of posterior positions of the occiput. Its importance is evidenced by its frequency, and the dangers to both mother and child; its neglect, by the fact that no paper upon this topic has been read before this Society, during its entire history. Moreover, a large percentage of cases of difficult labor, in hospital, private practise, and especially in consultation, are due to this cause. A consideration of this subject may well be, therefore, of more value than that of almost any other topic in obstetrics.

FREQUENCY—Williams states that the percentage of occipito-posterior positions in the Johns

* Read before the Rhode Island Medical Society, March 4, 1920.

Hopkins Hospital was 11.3% Cragin, reporting from the Sloane Maternity gives a percentage of 11.05%. In the Providence Lying-in Hospital, in 13,000 cases there were 1332 cases of right posterior position, or 12.4%, and 334 cases of left posterior, or 2.5%, making a total incidence of posterior positions of 12.8%. In addition to these, there were a considerable number which were classified in the records as right anterior, and undoubtedly a large number of these were in reality posterior at the beginning. It is interesting to note, in looking over the records, how many more right anterior positions are diagnosed by certain internes than by others. This is due, I believe, to the differing skill in vaginal examination. From these figures it will be seen that posterior positions are sufficiently numerous to warrant study, both as to diagnosis and treatment.

CAUSES—It is stated by some writers that the head normally enters the pelvic inlet in the transverse diameter, and that after the engaging surface has passed the inlet the occiput rotates either to the anterior or to the posterior. It may fairly be said that this opinion may still be open to some question. It is very difficult in most cases to determine exactly the moment when the head engages, and in fact usually by the time the examiner sees the patient, the position is determined.

Most of the authorities dismiss the etiology with a few brief and rather vague sentences; in fact some barely mention it. In my own experience, two conditions have so often been present in connection with these cases of posterior position, that I have been led to believe that they both may be causative factors.

In a very large proportion of these cases, the flexion of the head is not complete, and while the presentation is still a vertex, and not a brow, the head is almost at right angles to the shoulders, a position which has been aptly named "the military position". Of course, this deficient flexion is seen also in anterior positions, and is then a cause of dystocia, but I do not believe it is seen so often as in the cases of posterior position.

A second factor which is often operative is what I am in the habit of terming a "hard head"; i. e. a head more than usually ossified, with unyielding bones, and a very small anterior

fontanelle. Such heads do not mould well, and often cause prolonged labors. In my experience they are seen in the majority of the cases of posterior position.

It has been observed that some patients have repeated posterior positions, thus suggesting that there is some peculiarity in those individuals. What that may be, in most cases we cannot ascertain.

DIAGNOSIS—In speaking of the diagnosis and treatment, I shall speak in terms of a right posterior position, that being the most common. By substituting the word "left" for "right" the statements will apply equally well to left posterior positions.

On palpation, the back of the fetus is felt on the right, but more towards the flank than in case of an anterior position, and the small parts are more easily felt than usual. The cephalic prominence is felt on the right, and somewhat more prominently than usual, and it will be found frequently that the head is not firmly engaged, as engagement does not take place as early as in anterior positions. In general, it may be said that in the great majority of instances in which the back is on the right, the position is right posterior.

On vaginal examination, the posterior fontanelle is found directed toward the right sacroiliac joint and the anterior fontanelle toward the anterior left of the pelvis, the sagittal suture thus being in the right oblique diameter. Moreover, in many instances, as has already been mentioned, the flexion of the head is not as complete as usual, and the anterior fontanelle is therefore much more readily felt than normally. After labor has gone on for some time, especially if rotation is not progressing, there forms a thick caput which obscures the sutures and fontanelles, so that an accurate diagnosis is by no means as readily made as is indicated above. Indeed the most experienced examiner may be in doubt until he has introduced the entire hand into the vagina, and palpated the posterior ear and the occiput. Of course this can be done only under complete anesthesia.

By auscultation, the heart is best heard well over in the flank, in an entirely different position from that of its maximum intensity in the case of an anterior position. During labor, however, if normal rotation takes place, it is

very interesting to observe the change in the point of maximum intensity of the heart sounds from the flank to the anterior position of the abdomen, as the body of the fetus rotates.

MECHANISM—It is usually stated that the mechanism in posterior positions is exactly the same as in anterior positions, the only difference being that the occiput is required to rotate through an arc of 135 degrees instead of 45 degrees, i. e. from the sacro-iliac synchondrosis to the symphysis, instead of from the ileo-pectineal eminence to the symphysis. It is just this difference, however, that makes these positions so much more difficult for both mother and child. Various writers speak as if this rotation took place in most of the cases, but it is my own opinion, based upon observation, that this is not true. I am always surprised when a primipara is able to rotate a posterior occiput. If the occiput does rotate through this long distance, the remainder of the labor is in nowise different from that of an anterior position, which in fact it has now become. In some instances, the occiput rotates into the hollow of the sacrum, and the head may be expelled by the unaided forces of the mother, usually however with considerable damage to the maternal soft parts. At other times, the rotation begins, but does not progress farther than to bring the sagittal suture into the transverse diameter of the pelvis, and often not as far. The pains become ineffectual, and labor must be terminated by art. As has already been mentioned, the caput becomes very thick, so that the scalp appears at the vulva, while in reality the large diameter of the head is still high, thus leading one to believe that delivery will soon be accomplished. This incomplete rotation is in all cases due to faulty flexion. When flexion is normal, the occiput reaches the pelvic floor first, and is thus rotated to the anterior.

CLINICAL HISTORY—The progress of labor in these positions is quite different from that in anterior positions, and is so characteristic that one can almost make a diagnosis of the position in many cases without an examination. The membranes are apt to rupture early in the course of labor, due to the fact that the head does not fit as tightly into the inlet of the pelvis, in other words does not engage as firmly at the

beginning of labor, as in other positions. The contractions are short in duration, irregular, and not of great strength, and the labor is much prolonged, even in the cases which deliver themselves spontaneously. Because of these deficiencies in the contractions, the cervix dilates slowly, and often interference is demanded, for the sake either of the mother or child, before full dilatation has been reached. And this leads me to say that operative delivery is very often demanded, either because the mother is becoming exhausted, or because the child shows signs of prolonged pressure.

PROGNOSIS—As has been intimated, the prognosis will vary according as the occiput rotates to the front or fails in this rotation. In the former case, the danger to the mother is little if any greater than in a primary anterior position, although the labor is usually longer, and the patient is likely to become more tired. If, however, rotation fails, and delivery is by means of forceps, there is far more damage to the maternal soft parts, because the head is necessarily brought over a perineum which has not been prepared in the normal manner by prolonged pressure of the head. Likewise, the danger to the fetus is also increased, because the forceps are applied high up, and the head is subjected to much pressure during the extraction. In addition, during the application of the forceps, inasmuch as the head is often but poorly engaged, the cord may prolapse, and be pressed upon, and cause serious asphyxia or even the death of the fetus.

In the third form of termination of these cases, namely, by the rotation of the occiput into the hollow of the sacrum, the chief danger is to the perineum, due to the fact that the largest diameters of the head pass through the vulva. Instead of the suboccipito-bregmatic and the suboccipito-frontal, of nine and one half and ten centimeters, respectively, the occipito-frontal and the occipito-bregmatic, of ten and eleven and one half, respectively, emerge, and over-distend the perineum. There is also some added danger to the child, because of the prolonged labor.

Cragin gives the mortality as .3% for the mothers, and as 23.1% for the infants, and of the infants who died, about 60% were stillborn, due undoubtedly to the operative delivery.

We may therefore sum up the prognosis in the statement that the mortality of the mothers is practically nil, while that of the infants is large and worthy of serious thought.

TREATMENT—Most of the older writers, even down to the time of Lusk, well within the memory of many of us, in describing the operative delivery of these posterior positions, advise the extraction of the head with the face anterior. Some of them, it is true, speak of the possibility and even the advisability in certain selected cases, of rotating the head to the anterior position, either before or during the traction. In most cases this is said to be difficult, and is not advised. At the present day, however, it is recognized that the ideal termination of a posterior position is by its conversion into an anterior position, either by means of the maternal forces, or by the assistance of the obstetrician. To this end, it behooves the attendant to exercise the greatest patience, bearing in mind the fact that these cases are almost always prolonged, but that so long as neither the mother nor child show signs of exhaustion, there is no indication for interference. In many instances, even under favorable conditions, the labor will go on very slowly, the os dilating to admit two or three fingers, and then becoming rigid. It is then well to give the patient a hypodermic of a quarter of a grain of morphine, which will enable her to obtain two or three hours of refreshing sleep or at least some freedom from pain, and allow the uterus, tired out, to regain strength. The cervix often softens under the influence of the morphine, and on awakening, the pains recur with increased vigor, and the labor progresses to a favorable termination. In some cases, if the cervix is extremely rigid, and seems to be dilating very slowly, the insertion of a Voorhees bag will cause it to soften, and after the bag is expelled, the labor will proceed satisfactorily. It must be emphasized again that labor in posterior positions is commonly long and tedious, even if terminated spontaneously.

If, however, the occiput does not rotate at all, or rotates to the transverse position, and the mother or fetus begin to show the effects of the long fruitless labor, operative interference is demanded in the interest of both. The only patient whom I have seen die from

the exhaustion of labor was a woman who had been in labor seven days with an unrotated right posterior position. I mention this as an extreme instance of the danger of allowing these patients to try too long to deliver themselves, spontaneously. The cardinal principle in the operative delivery of unrotated posterior positions is the conversion of the posterior position to an anterior one. The head should never knowingly be delivered face to the pubis. I say knowingly, because most operators have extracted the head with the occiput persistently posterior, when it was thought that it had been converted into an anterior position. This will happen less and less frequently as the operator becomes experienced. There are two methods by which the head may be turned from a posterior position to an anterior. First, the forceps may be applied as nearly as possible to the sides of the head, and traction made until it impinges upon the floor of the vagina. Then, rotation may be accomplished somewhat as in a normal delivery, by means of the forceps, removing them when the rotation is nearly completed, and reapplying them and then effecting delivery as is usual in an anterior position. This method entails a considerable amount of risk of traumatism to the maternal soft parts, and although recommended by certain authorities, does not seem to me to be the best method. Much the better procedure is to rotate the head by the hand; the entire hand is introduced into the vagina, the head grasped as firmly as possible, and by a turn of the wrist the occiput can always be rotated into the desired position. At times it may be necessary to push the head up and disengage it, before rotation can be accomplished. This is especially true if the labor has gone on for some time, and the head, unrotated, is in sight, or near the perineal floor. In all cases, it is best to over-rotate, so to speak: i. e. in case of a right posterior, the occiput must be passed beyond the promontory of the sacrum, and converted into a left anterior; in case of a left posterior, it must be changed into a right anterior. If this is not done, the head is liable to slip back into its original position, during the application of the second blade of the forceps, when it is difficult to use the fingers in the vagina, as a guide. While the rotation is thus being accomplished by means of the hand

applied to the head, an attempt should be made by an assistant to turn the body in the same direction, by pressure along the back of the fetus. If these directions are followed, it will be found that the rotation can in most cases be accomplished without great difficulty; after the head has been super-rotated, as described, it will usually remain in the desired position, and forceps may then be applied precisely as in any anterior position.

This manoeuvre is, I believe, one of the greatest advances made in obstetrics in recent years. In place of nearly always dragging the head through the vulva with the occiput posterior, and always with lacerations of considerable severity, the delivery is usually easy, in fact often surprisingly so, and the lacerations not deep. During the delivery, if the perineum seems not very elastic, it is wise to do an episiotomy, either single or double. This will often save the patient from a much deeper tear.

In many instances it is true, vigorous traction is necessary, but it should be remembered that the head must be moulded, exactly as in a normal delivery, and that in a forceps delivery we commonly accomplish this moulding in a much shorter time than in a spontaneous birth.

SUMMARY—The points to which I desire especially to call your attention are:

1. The frequency of posterior positions.
2. The mechanism—deficient flexion.
3. The distinctive character of the labor.
4. The serious prognosis for the infant.
5. The treatment by manual rotation of the head, followed by delivery with forceps.

DISCUSSION OF DR. PARTRIDGE'S PAPER.

DR. R. H. CARVER, Providence, R. I.—Dr. Partridge has given us such an exhaustive paper that I do not think there is anything to add. He has already covered the ground very thoroughly.

The subject is an important one as the condition is frequently met with in practice, and if not properly treated will subject the woman to a great deal of unnecessary suffering, and shock, traumatism and invalidism, and endanger the child. Probably one-half of the cases that I see in consultation are posterior positions, usually R. O. P. The text-books state that most of these posterior positions

rotate spontaneously sometime during labor to the anterior position. That does not accord exactly with my experience; there are certainly a great many that do not rotate.

It is only in comparatively recent years that operative interference for the relief of this condition has received much attention except by specialists.

It is the tendency now more than formerly to try to save suffering for the lying-in woman. A posterior position which does not rotate means a long, exhausting and painful labor with bad lacerations. Much of this can be prevented by timely interference. After the os has become well dilated or dilatable and the pains have continued for two hours without advancing the position of the child, I believe it will be to the advantage of both mother and child to rotate the head and deliver the child with forceps. If the head is floating above the brim it will usually be better to do a podalic version.

It is singular how many writers and textbooks advocate the Scanzoni method of rotating the head—that is, with the forceps. It is safer and more satisfactory to rotate with the hand and it can almost always be done. If the rotation is done with the hand the head can be placed exactly where we want it, the hand passed over the occiput, the head firmly flexed and the face pressed down to the right of the promontory, if it be a R. O. P. If done in that way the head will almost always stay rotated. If rotated with the forceps, the head is less likely to stay in position. It is not often necessary to pass the hand beyond the head and rotate the body, a procedure which may be followed by the funis coming down and which adds a serious complication. Some writers advocate rotating the head under ether and then leaving the case to progress as a normal labor. I have never done this but I feel sure that the head would return to the posterior position, necessitating another etherization and replacing the head and delivery by the forceps.

There is nothing in obstetrics that yields more satisfactory results than the proper management of occiput posterior positions and it seems to me that more consideration should be given to it in the text-books and in the schools.

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EDITORIALS

THE MILK CAMPAIGN.

Physicians should interest themselves in the campaign which has recently been inaugurated for preserving the standard of milk in this state. Of the many topics which will be brought out in the discussion, two, at least, are deserving of earnest consideration by the medical profession.

There is imminent danger that the fight to maintain the present standard of milk in this community will be lost. More samples of low

standard milk have been taken in this state during the past year than for some time previously. There is an attempt to evade the law by certain producers and to foist an unclean and dangerous product upon the innocent consumer. The lessons of the famous fight of the Providence Housewives League several years ago in behalf of the enforcement of the present milk law are likely to be forgotten unless the public is awakened to a realization of conditions at present existing in the dairy industry.

The public should be encouraged to drink more milk in spite of the prevailing price. The

production of milk in this state is rapidly falling off, and owing to the present high prices of feed and labor, dairy herds are being broken up and sold. Dairymen are becoming discouraged, and there is a likelihood that the production of our most important article of diet will be seriously jeopardized. It is superfluous to point out to the reader of these lines the value of milk as a food for both young and adult. In his daily rounds the physician can do a valuable bit of missionary work in encouraging the wider use of clean milk at this critical period in the industry. He should also lend his aid in supporting the meetings in connection with this campaign for milk betterment.

THE WORKINGS OF THE MARYLAND PLAN.

On another page appears the report of the transactions of the April meeting of The Washington County Medical Society. At that meeting a resolution was passed requesting each member of the Society to report to the Secretary, on the status of his financial relations with service men. At the outbreak of the war most societies passed resolutions adopting The Maryland Plan or some modification of it. How well it was lived up to seems to be a question. Obviously during the pandemic of influenza just preceding the armistice, and for three months after, when the largest number of physicians were in service, medical work in civil life was in a very abnormal state and the doctor treated all sorts and conditions of patients, in a feverish haste to be of the greatest assistance to the largest number of people, often without knowing whose patients he was treating. It is plain that to have lived up to the letter of the law would have required a complicated set of accounting which would have seemed like the last straw. Granting that abnormal conditions and the stress of unprecedented demands for doctors are not valid reasons for failing to meet an honorable obligation, is it not wiser to let the accountings under The Maryland Plan remain a question of personal honor rather than to demand an investigation of a question both delicate to handle and difficult to interpret.

A skilled mechanic stayed at home in safety and made unheard of wages, while a fellow

workman was sent to a front line trench to risk his life at a compensation not worth mentioning. A contractor built for the government on a "cost-plus" basis and now rides exclusively in a high powered limousine, while many a conscientious doctor did yeoman service on a draft board for no pay whatever. "C'est la guerre."

THE COUNCIL OF MEDICAL EDUCATION.

To many of the busy practitioners of medicine the Council of Medical Education is no more than a name. The achievements of this body, however, have been most notable and should be known by all who are interested in the advances in medicine. When the Council started its investigations in 1904 and 1905, it had one ideal to which it intended to cling, namely, that each school should require two years of premedical work and then give a four years course in medicine and finally require one year of hospital work before granting the degree. This ideal has practically been attained because whereas in 1905 there were only 5 of the 162 schools that insisted on these requirements, in 1919 there were 79 of the 85 schools that had agreed to adopt the suggestions of the Council. Furthermore the elimination of the many undesirable schools that was brought about by their survey and by their classification into the A, B and C schools has done much to put medical education on a higher level. In the first survey it was discovered that 40 of the 162 schools had no laboratories at all, but at the present time there is no school that does not have at least three laboratories. It was thought by many that the elimination of so many schools would tend to lead to a dearth of physicians, but such has not been the case, for there is one physician to every 720 people in the United States, whereas in England the proportion is one to 1500.

Because of the work of the Council in stimulating medical progress in the United States, the medical schools have a wonderful opportunity. In former years it was considered necessary to spend some time on the continent, especially in Germany, if one was to consider his medical education complete. It seems as if the time is now at hand when a year or more at one of our large medical centres will be considered not only

essential for the completion of our medical education, but also necessary for our medical brethren from overseas.

SOCIETY MEETINGS

WASHINGTON COUNTY MEDICAL SOCIETY.

The regular quarterly meeting of the Washington County Medical Society was held at the Colonial Club, Westerly, Thursday morning, April 8, 1920.

The feature of this meeting was an illustrated address by Dr. Frank E. Peckham, of Providence, on the subject of "Fractures."

The attention of the Society was called to the fact that the provisions of the vote passed April 12, 1917, regarding taking care of the practices of those members who went into Government service, had not been lived up to and the Secretary was instructed to send a copy of this vote to each member, with a request to report to the Secretary as to how faithfully he had lived up to the regulations contained in said vote.

One application for membership was received. Adjourned and dined.

W. A. HILLARD, M. D., *Secretary.*

PROVIDENCE MEDICAL ASSOCIATION.

March 1, 1920.

The regular monthly meeting of the Providence Medical Association was called to order in the Medical Library by President D. L. Richardson on March 1, 1920, at 8:50 p. m.

The records of the previous meeting were read and approved.

The President announced that Dr. William R. White and Dr. Charles H. French had been appointed a committee to draw up a memorial on the death of Dr. Frank B. Fuller, after which Dr. William R. White read the memorial.

Dr. C. H. Leonard moved that the memorial be approved by a rising vote, seconded, and rising vote given.

The first paper, "Albuminuria in Nephritis, Significance and Treatment," was read by Dr. Herman J. Mosenthal of New York.

The second paper, "Non-Nephritic High Blood Pressure," was read by Dr. James C. O'Hare of Boston.

Both papers were very instructive and most enthusiastically received by the members.

The discussion was opened by Dr. Frank T. Fulton, and Dr. Mosenthal and Dr. O'Hare closed the discussion of their respective papers.

Dr. William R. White moved that a vote of thanks be given to the speakers of the evening, seconded by Dr. Burge, and passed.

Dr. Leonard moved that a copy of the memorial to Dr. Fuller be sent to the family, and passed.

There being no further business, the meeting adjourned on the motion of Dr. Burge at 10:45 p. m.

Attendance: 88 members and 6 guests.
Collation was served.

Respectfully submitted,

RAYMOND G. BUGBEE, M. D.,
Secretary.

HOSPITALS

MEMORIAL HOSPITAL.

The regular meeting of the Memorial Hospital Staff Association was held in the Out-Patient Building, March 30, 1920, at 8:45 p. m. The President of the Staff Association, Dr. J. A. Remington, was in the chair. In the absence of the Secretary, the business session was omitted.

There were present Drs. Abbott, Peckham, Remington, Jones, Oulton, Hammond, Holt, Harris, Munro, Wheaton, Hawkins and Dowling.

Dr. Rowland Hammond presented numerous lantern slides illustrating the work of the Military Orthopedic Hospitals in the British Isles.

The subject was discussed by Drs. Peckham, Jones and Remington.

RHODE ISLAND HOSPITAL.

The annual banquet of the Rhode Island Hospital Club was held at the Wannamoisett Club, April 14, 1920, at 6:30 p. m. Approximately 100 members and guests were present. The President of the Club, Dr. William B. Cutts, acted as toastmaster.

The speaker of the evening, Mr. Hector MacQuarrie, gave an interesting description of life in Tahiti, one of the French Society Islands in the Southern Pacific. The talk was interspersed with spicy anecdotes and pungent reminiscences of a little known portion of the globe.

Musical selections by Messrs. Alfred G. Chafee and Muldrew added to the enjoyment of the evening.

The regular meeting of the Rhode Island Hospital Staff Association was held at the Hospital, April 12, 1920, at 8:30 p. m. Routine business was transacted.

Dr. Harold Johnson and Dr. Frank Matteo completed their internship at the Rhode Island Hospital on April 1, 1920.

Dr. Matteo has opened an office on Broadway, Providence, R. I.

The following men began their internship on April 1, 1920: Drs. John Oslin, Russell Smith, Bahnson Weathers and William Murphy.

Miss Inez C. Lord, Superintendent of Nurses, and Miss Amy Allison, Instructor of Nurses, have been at Atlanta, Ga., attending a convention of the American Nurses' Association.

ST. JOSEPH'S HOSPITAL.

A regular meeting of the St. Joseph's Hospital Staff Association was held at the Rhode Island Medical Society Library, March 24, 1920, at 8:30 p. m. About 60 members and guests were present.

Paper by Dr. M. J. O'Shaugnessy, entitled "Diseases of the Thyroid Gland." The paper was an interesting account of personal experiences with thyroid cases in the goitre district of Minnesota.

A regular meeting of the St. Joseph's Hospital Staff Association was held at the Rhode Island Medical Society Library, April 9, 1920, at 8:30 p. m. Approximately 45 members and guests were present.

Paper by Dr. Henry Viets of Boston, entitled "Spinal Cord Injuries and their Importance in Prognosis in Urological Cases," with report of twenty war cases.

MISCELLANEOUS

DR. WILLIAM J. BURGE,
On his 89th Birthday.*
By WILLIAM R. WHITE, M. D.,
Providence, R. I.

From dates and records it appears
You, sir, have lived a lot of years.
Indeed, as science reckons time
Your years now number four score nine.

(*Read at a dinner in celebration of Dr. Burge's anniversary, April 12, 1920.)

We youngsters, some of us at least,
Now present at this birthday feast,
Ourselves acknowledge three score ten,
The number fixed for average men.

But who of us will see the time
We can look back on eighty-nine,
And if we do we know it's true
We can't be in the class with you.

Perhaps on us a joke you've sprung
And really are a man quite young.
Indeed this might to us seem true
When we just take a look at you.

Your ruddy face, your rounded cheek,
Do not your many years bespeak.
Your form erect, your springy step
Suggest much strength and vigor yet.

Why count the years, What is man's age?
Is spirit not the rightful gauge?
Think not, dear friend, of eighty plus,
All hail! to-night you're one of us.

If 'leven years from now we meet
And once again each other greet,
May we find you on deck once more,
As young as now at full five score.

But doctor dear, it's yours to give
Some sound advice as how to live
That one may pass a long life through
And find himself as we find you.

So modest you, perhaps you'll balk
And of yourself refuse to talk;
But you to us have been well known
So we can make some points our own.

And first of all it's understood
You came of stock both clean and good;
As child you surely were not spoiled;
By vice in youth you were not soiled.

And then as man, what each here knows,
'Twas our profession that you chose!
To prove you met its great demands
Your brilliant record by you stands.

On land or sea, in war or peace,
Your earnest efforts did not cease.
You faltered not, you practiced well,
Which fact it's my delight to tell.

'Twas yours at times to join in strife,
Again to share the joys of life;

You've known the benefit it brings
To soften care by lighter things.

Life's funny side, the yarn, the joke,
The pipe or the cigar you smoke,
The comforts of your happy home,
The love of kindred you have known;
The gentle clasp of grandchild's hands,
Around your life have woven bands;
And childish voices songs have sung
Which must have helped to keep you young.

Thus while your life's long road you've trod
You've served mankind, your church, your God.
Your life's beginning has been here,
Eternity brings you no fear.

And now at age of four score nine
What wealth of memories must be thine.
What blessing that you gift retain
Life's pictures to review again.

Forget the sorrows, trials, grief
Triumphant in the grand belief
And dearest thought that words can tell,
Our Father doeth all things well.

As nineteen twenty rolls along
May each day find you going strong.
On no account may we be told
That Doctor Burge is growing old.

Though April twelfth of twenty-one
In course of time will surely come,
And you, good man, must answer then
The roll call numbered four score ten.

Accept the honor, have no fears,
Be burdened not by all those years;
Life's measured not by simple length,
What count are courage, health, and strength.

Just pass your time as would seem best
With alternating work and rest,
And walk and talk and sleep and dream
Of what you've done and heard and seen.

Most earnestly I now declare
Your host of friends from everywhere
On each recurring natal date
With love will you congratulate.

So comrade, brother, truest friend,
We'll help each other till the end.
Whatever age you may attain
May you be free from wearing pain.

Of our own strength we cannot stand,
But in the hollow of His hand
Who rules the life of every man
By His divine and loving plan.

We know the hope and faith are yours,
The faith that over all endures,
When summoned hence you'll ready be
To say "I come, Thou leadest me."

CANCER IS INCREASING.

Cancer, probably the most dreaded of all diseases, is on the increase in America and throughout the world in spite of the fact that it is curable if treated early. In its death toll in the United States cancer already ranks among tuberculosis, pneumonia, heart disease and diseases of the kidney, and it is much more feared than any of these. This is because of the ignorance of the public, the difficulty of detecting a cancer in its early stages and the fact that when it has reached the recognizable stage it has gone beyond the curable stage.

The medical world today believes that work for the control of cancer should be largely similar to that so successfully carried on in tuberculosis; that is, it should consist mainly in widespread education of the general public to recognize cancer in its precancerous state, it should train the people at the first alarm to seek the advice of a competent physician, and it should keep the public freely advised of the latest scientific knowledge concerning cancer, its causes, prevention and cure.

The first and most important requirement in such a campaign of education is that the public change its viewpoint. The United States Census Bureau for 1917 gave a total of 61,452 deaths from cancer as compared with 112,821 from pneumonia, 110,285 from tuberculosis, 115,337 from heart disease and 80,912 from kidney diseases. So it will be readily seen that cancer already ranks among the leading causes of death in this country.

Cancer is apparently increasing. The recorded death rate shows about two and one-half per cent. more cases every year. It has risen from 62.9 deaths per 100,000 of population in 1900 to 81.6 in 1917. Some of this increase is unquestionably due to an improvement in recording and gathering vital statistics and to better diagnosis, but it is generally believed that these factors do not alone account for the increase.

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ORIGINAL ARTICLES

VASCULAR HYPERTENSION.*

By JAMES P. O'HARE, M. D.,^{*}

Boston, Mass.

From the purely clinical point of view, hypertension may be divided into two types—the nephritic, such as occurs with chronic interstitial nephritis, and the non-nephritic or “vascular” hypertension, as I will call it throughout my talk. I recognize the latter may be and often is the precursor of the former. Up to the present time, however, the practitioner has failed to recognize but one type and has called all cases of high pressure, especially those with albumin and casts in the urine,—chronic interstitial nephritis. Now this is not at all right. Let me illustrate by a case which is being brought to our attention all the time. In 1915 a man of 37, in the course of an insurance examination was found to have high blood pressure, albumin and casts. The examiner—and he was associated with one of our big companies—told the patient that he had chronic Bright's disease and would be dead in six months. Of course this was a very foolish statement to make even if the man had chronic nephritis. However, since 1916 this man has been under our observation many times and has at no time shown any evidence of nephritis. For a year he has been having considerable myocardial disturbance and will probably die a cardiac death. But the insurance examiner and practitioner are not the only ones at fault. You will find the records of most of our hospitals show the same error. Even at the Peter Bent Brigham Hospital where we have been studying intensively nephritis and allied problems for a long time, we are now recognizing our mistakes of the past. Patients diagnosed several years ago

“chronic nephritis” are occasionally coming back to us and showing practically normal functional findings.

About four years ago a woman of 40 entered our hospital with hypertension, albuminuria and cylindruria. In spite of the fact that her function was practically normal she was diagnosed chronic nephritis with hypertension. About one year ago, she appeared again in the hospital and apart from the fact that her pressure was somewhat higher and her heart a little bigger, there was no change. Her urine was the same and so was her renal function. Had our original diagnosis been correct we should have expected our patient to show some toxic renal symptoms and her function to be much reduced. But up to the present time, this had not taken place. Our original diagnosis was incorrect.

Granting that in the past we have all made mistakes, it is now absolutely necessary for us to differentiate these two types of high blood pressure. In the first place, we must strive to be as accurate in the diagnosis of the lesion as is possible. In the true nephritic we have a small kidney and a lesion involving the glomeruli, tubules, and renal vessels, whereas in the true vascular case, the kidney is normal in size and the lesion—if any—is confined largely to blood vessels. Where the pathological differences are so great we should certainly strive to recognize them in our clinical diagnosis.

More important than the diagnosis, however, is the prognosis in these vascular cases. In contrast to the nephritic patient, death is very rare in uremia. Cardiac failure or angina is a more common cause. But by far the commonest cause of death, is cerebral hemorrhage. I think we owe it to ourselves, to our patient and especially to the patient's family to make the proper diagnosis and to recognize that his death is liable to be a sudden one. Now the true nephritic rarely dies a sudden death. There is no such thing as acute uremia. When a patient who has high pressure, albumin, and casts suddenly becomes

*From the Medical Clinic of the Peter Bent Brigham Hospital, Boston, Massachusetts.

*Read before the Providence Medical Association, March 1, 1920.

unconscious or has a convulsion, out of a clear sky, you are pretty safe in thinking that he is a vascular case and has but little nephritis. Let me illustrate by a case. Early in 1917, we had an old fellow whom we had diagnosed "chronic nephritis." On the way to one of Billy Sunday's meetings he suddenly had a convolution on the street, and was brought in to us, unconscious. There was absolutely no paralysis, or other evidence of any localized lesion. If there were such a thing as acute uremia, we would have been justified in making such a diagnosis. The patient improved somewhat in the hospital until a week after entering, when he had another convolution and died. Now remember, he had absolutely no localizing paralysis or other evidence of cerebral hemorrhage. At autopsy he had two huge hemorrhages in the frontal convolutions—the silent areas of the brain. The kidneys showed only very moderate arteriosclerosis with, of course, no possibility of uremia from such a lesion.

The treatment of these non-nephritic cases, too, has often been unnecessarily rigorous on account of the mistaken diagnosis. A marked and prolonged restriction in the protein of the diet is often a worthless and unnecessary hardship. A low protein diet, by its indirect effect of limitation of the total food intake, may be beneficial, but there is absolutely no evidence that it in itself lowers blood pressure or improves the symptoms. Clinical experience teaches us that patients, as a rule, need more protein than the minimum required to just keep them in nitrogen equilibrium. They may live on such a low diet and maintain their body weight, but they are weak and feel poorly most of the time. I have often thought that some of the symptoms we have attributed to disease should be charged in part at least to our treatment. It is quite surprising to note the improvement in general condition, strength, and feeling, when a patient who has been on a prolonged low protein diet is given a more generous and varied diet.

I do not wish to seem to decry the use of the low protein diet in either nephritis or in vascular hypertension, but it should not be continued longer than is necessary.

There is still another reason for differentiating these two diseases. It is said that if you see the

non-nephritic, high pressure case early, you can cure it. Now you practitioners are the only ones that see these cases early and it is up to you to cure them.

You can see how important it is to recognize this condition from the point of view of diagnosis, treatment, and especially prognosis. And it is quite easy to do so, clinically. If you will just remember that there is such a disease, you will be surprised to see how often you can diagnose it with a fair degree of accuracy.

Let us take some hypothetical cases for comparison. Your vascular case is typified by the business man of 45 or over, in whom there is a family history of apoplexy, cardiac or renal disease. He has always carried heavy responsibilities and has been "too busy" to take vacations. In appearance he is often of good color and is overweight from overeating. He does not look in the slightest degree like a sick man. He comes to you because of headaches or because he is abnormally tired. On examination his hypertension is found. If the patient is a woman, she is of similar type, usually in the menopause or near it, and is extremely nervous and irritable. Urinalysis in either case might show albumin and casts, and an ability to concentrate to a high specific gravity. This last is very important, as it is different from what is found in the severe nephritic.

A comparable nephritic patient is, in contrast, often a younger individual, pale, sallow, and thin. His symptoms include not only those vascular ones like headache, etc., but also toxic ones,—drowsiness, nausea, and vomiting, etc. Urinalysis shows albumin and casts just as in the non-nephritic case, but, as a rule, the ability to concentrate is much reduced.

A few words now about the blood pressure in these two diseases. While it is true that the pressures in both may be about the same, it is also true that the non-nephritic averages the higher pressure. It is perfectly fair to assume that any patient with a systolic pressure over 250 is primarily a vascular case and that he has little or no nephritis. In my experience at the Peter Bent Brigham Hospital, I have never seen but two cases of such pressures that were possible exceptions. Of course, this high level is not always maintained, and rest, quiet, and diet, may lower it to that level which is characteristic

of the nephritic. Should you first see your patient in this stage the blood pressure would not help in the differential diagnosis.

Clinically, therefore, it seems possible to diagnosis outstanding cases of high pressure without nephritis. Given a well nourished individual of good color, whose systolic blood pressure is very high, 250+, and whose urine shows an ability to concentrate well, the odds are much in favor of hypertension without nephritis as against the so-called interstitial nephritis.

But these patients are not always outstanding cases and, furthermore, it is desirable to prove your diagnosis. This can and should be done in all cases of hypertension by means of the tests of renal function. I shall speak only of the three in common use. The phenolsulphonephthalein test consists, as you know, in the injection of this dye intramuscularly or intravenously and the collection of the urine at the end of two hours and ten minutes. This urine should contain in the normal individual 50 per cent. or more of the injected dye. It is by all means the simplest test and can be done by any one. It is, however, not very delicate. The blood urea nitrogen is more complicated and requires a laboratory equipment. It consists in the determination of the urea nitrogen of the venous blood. This, in the fasting individual should not be over 15 mgm. per 100 c. c.

The "two hour renal test" consists of specimens of urine collected every two hours during the day and one night twelve hour specimen. These specimens are collected while the patient is taking a diet consisting of a simple breakfast and supper and a heavy noon meal, containing a considerable amount of fluid, salt, nitrogen and diuretic substances. The normal patient should excrete a urine which, in the two hour periods, varies in volume, and concentration and amounts of salt and nitrogen. This may be modified—for simplicity sake—by determining only the volumes and specific gravity. The twelve hour night specimen should be small—not over 700 c. c. and its specific gravity, 1018 or over. The pathological case cannot so well vary the volume and amounts of water, salt and nitrogen. Nor can it concentrate to a high level. The maximum specific gravity, therefore, is lowered. The night urine is increased in amount and its specific gravity is decreased.

Now how much do these tests help us in differentiating between chronic nephritis and hypertension without nephritis? In almost every case they clinch the diagnosis. The vascular hypertensive case rarely shows a phthalein excretion under 50 per cent. The blood urea nitrogen is rarely abnormal and about the only abnormality in the two hour test is a tendency in some cases toward an increased volume of urine at night.

Having demonstrated the necessity and the ease of differentiating vascular hypertension from chronic nephritis, let us drop the latter and consider only the signs and symptoms of the former. These naturally fall into three groups related to the organs commonly affected—(a) the kidneys, (b) the heart, (c) the peripheral vessels. Of course, it must be remembered that it is the vessels that are primarily affected in both the kidneys and heart. If these vessels have been damaged long enough, secondary changes take place in the parenchyma of these organs, and these changes may then give rise to symptoms.

The average patient has no renal symptoms except nocturia. We usually find from time to time a little bit of albumin and a few hyaline casts. But these do not indicate nephritis—only renal damage from changes in the blood supply. The kidney itself is normal in appearance except for arteriosclerotic vessels and slight scarring due to obliterations, etc., of an occasional such vessel.

It may not be amiss to say at this point that a trace of sugar is occasionally found in these cases, too. This does not mean that the patient has diabetes.

Let us take up the heart next. Every patient who has this disease for any length of time shows sooner or later some cardiac disturbance. This may take any one of several forms. Do not forget that you may see your patient for the first time when the heart is badly decompensated and you may be led into the error of regarding it as a pure cardiac case. Dyspnoea is extremely common and may vary from slight breathlessness on exertion to the marked condition found in broken compensation. Another interesting type of dyspnoea is the paroxysmal smothering, coming on usually at night and often without immediate cause. In this type, the

patient is often awakened out of a sound quiet sleep by a terrific sense of smothering, referable to the base of the heart. It may last only a few minutes or may persist for quite a long time. It is very closely allied to angina, and may spring from the same cause. The next cardiac symptom to consider is cardiac pain. This may vary from slight feeling of weight or soreness over the precordia when tired, through all grades to the typical severe angina pectoris. Your patient may die in such an attack. Often there is associated with this, tenderness over the heart area. Lesser cardiac complaints are pounding, felt especially during excitement, and a skipping of beats.

As to signs—hypertrophy is present in practically every case, even the earliest. This may not be found by the usual methods of physical examination, but the electrocardiogram and X-ray show enlargement in almost every case. (We must, however, accept the evidence of cardiac enlargement from the X-ray with considerable reservation. Recent reports from the Army have shown that the X-ray seven-foot plates may show a shadow well beyond the accepted borders when the heart is absolutely normal.) There is no type of cardiac irregularity that is characteristic of this disease. Occasionally, if the myocardial changes are great enough, fibrillation may be found. Much more commonly we note extrasystoles. Of course, too, we may find weak sounds or variations in the force of the beats. If the heart can no longer stand the strain of the high pressure, "broken compensation" occurs. There is another interesting sign of cardiac embarrassment that is not often made out while listening to the heart but may be noted in the pulse and especially well while taking the blood pressure. I refer to the condition called *pulsus alternans*. This is extremely important and indicates a grave prognosis. It is very easily recognized and I would suggest that you look for it in every case. As you know, it consists of alternating weak and strong beats. You can recognize it with great ease if you will note the character of the sounds heard while taking the blood pressure. In a typical case you will hear only every other beat at or near the systolic pressure. When the pressure in the cuff has

fallen perhaps 20 or 30 mm., the second beat will come through. Sometimes instead of alternate beats falling out you will note that every other sound is a weak one.

Now we come to the signs and symptoms referable chiefly to the arteries. I shall try to be brief and shall hasten over the less important conditions. Roughly we may group them all into those involving the peripheral vessels and those involving the brain and cerebral vessels. In the former group we have nose-bleeds and excessive bleeding from any source. Muscle cramps in the calves and in the feet are extremely common and these are due to the insufficient blood supply through the narrowed arteries. Numbness, tingling and cold extremities are frequent.

It is well to speak at this point of the arteries themselves and the blood pressure. You may often be surprised not to feel or see any sclerosed or tortuous arteries in these cases. Occasionally, you make the mistake of judging by the radial artery alone. This may not be palpable. But feel for the brachial. It may be much thickened. In most cases the very small vessels,—if the retinal arteries are an index—are much more affected.

I have told you that the blood pressure is often extremely high. Remember, however, that it does not get that way all at once. It isn't as high when the process starts. Consequently, the pressure may be found at any level.

There is another very important thing to mention in connection with the blood pressure. It is extremely unstable and varies from second to second. A slight amount of exercise or the emotion caused by any stirring thought may drive up the systolic pressure 40 points inside of two minutes. On the other hand, the pressure may fall 30 points in 15 to 20 minutes as a result of physical and mental rest. This is extremely important to remember because variations of 10 to 30 points in either direction are of very little importance, unless they are progressive and in the same direction. We must be very careful in giving credit to any procedure which apparently shows a temporary reduction of a few points in the blood pressure.

Now let us go on to the cerebral symptoms, which frequently are responsible for bringing

the patient to your office. He may complain of any combination of the following symptoms:—irritability, nervousness, and extreme worrying; lack of concentration, loss of memory and of co-ordination; fear; sleeplessness; dizziness; ringing in the ears; and headaches. The latter are fairly characteristic. As a rule they are occipital and occur early in the morning. They often awaken the individual about 5 A. M., and disappear quickly when he gets up and around. The increased circulation seems to dispel this symptom. The adjustment to these headaches is rather remarkable. Many times these patients complain of excruciating headache in the earlier years of their hypertension with a systolic pressure ranging about 200. And yet two years later with a pressure around 250 they may notice little or no headache.

Occasionally the cerebral symptoms may be much more serious. There may be an increasing mental weakness. Again there may be a vascular crisis resembling a cerebral hemorrhage. There may be a very transient aphasia or paralysis of one extremity, etc., clearing up so quickly that it is hard to believe they are due to hemorrhage but must be caused by localized spasm of a cerebral vessel. The arteries in this disease are very prone to such spasms. The most extreme cerebral disturbance, of course, is cerebral hemorrhage—which needs no comment.

A constant symptom—which is hard to classify—and one that is present in almost every case, is tire on the slightest effort.

In the earlier part of my paper, I have spoken about the prognosis. Let me repeat what I said there. Most of these patients die of cerebral hemorrhage. Some die of angina or a definite myocardial break. Only a rare one shows a progressively increasing renal involvement with death in uremia.

Just remember, however, that this refers to the ultimate end. The fact that an individual has a high pressure does not necessarily mean that he is going to die right away. It is surprising how long some of these patients may live with a very high pressure. Without doubt some of them carry an elevated tension for five to ten years. I have one patient who is known to have had an increased pressure in 1910. I have another whose systolic pressure has vasil-

lated above and below 300 for a year. Both have had cerebral vascular attacks—but are still alive.

As to treatment I must say that the results in the older cases are far from satisfactory. Allbutt who has worked long and hard on this problem states that it is possible to cure many cases if you see them early enough, i. e., before the entire vascular mechanism has become set or permanently rearranged. This is of extreme importance to you practitioners because you are the ones who see them early. It is up to you to recognize the condition and to cure it. When permanent rearrangement of the vascular system has taken place we may no longer hope to cure, but, by the common sense modification of the therapeutics for cure, we may greatly postpone the eventual cardiac or cerebral outcome.

Let us consider for a minute what we are planning to treat. If we omit the cardiac element which may or may not need attention, we may say that we are to treat an individual who is overweight and nervous, who for years has been burning the candle at both ends as far as mental and physical effort goes and who now is found to have high blood pressure. The foundation of all treatment must lie in the re-setting of the natural conditions of the patient. His whole life and habits must be re-vamped according to the motto—Moderation in Everything. This does not mean that he should be wrenched completely out of all his associations, but these must be pared down to within reasonable limits. We must teach him to realize that he must "slow up."

It is often well when this condition is discovered to insist on a good rest. This we may accomplish very successfully if we can get the patient to the hospital for study. Or we may send him to one of the numerous spas—the chief virtue of which for him would be the enforced rest in a pleasant atmosphere and the impression gained that vacations are desirable and beneficial. Of exercise I should say that moderate, regular exercise in the form of walking, golf, etc., is very beneficial in that it increases cardiac tone and in this way improves the circulation. Massage is undoubtedly of value, with perhaps, a weekly electric light bath. I insist on all patients resting for an hour a day. This ac-

complishes a two-fold object—the actual rest and a definite break in the day's routine.

Diet is an important part of the treatment of this condition and much has been written by the advocates of low protein or low carbohydrate diet. I am fairly convinced that the diet question centers around the moderate restriction of all elements—to prevent over-eating—rather than the marked restriction of protein, carbohydrate or fats. There is no evidence as yet that a low protein diet lowers the pressure. It may indirectly, by a restriction in the total amount of food eaten, cause a loss of 10 to 15 pounds and be beneficial in this way. On general principles, it is well to restrict salt, condiments, alcohol and excessive tobacco.

A word on the effect of drugs. Outside of a very questionable benefit from potassium iodide and sodium iodide, I cannot say that any drug helps. Certainly there is not the slightest evidence that the nitrites are indicated. They have not even lowered the pressure, in my experiments. Furthermore, there has often been a short sharp rise of pressure following the administration of nitroglycerine. One must admit, however, that the latter is clearly indicated in the angina which is often present. Symptoms of course, like those indicating cardiac break should be treated in the appropriate way. Some of my women patients feel better when they are taking ovarian extract. Perhaps more of them would be benefited if we had stable preparations. A caution against the use of adrenalin; this drug often causes a terrific rise in blood pressure and one may get a cerebral hemorrhage as a result. One of my patients had a terrific attack of angina pectoris following its use.

Bleeding is about the only other measure that is indicated and this only when there is evidence of threatened cerebral hemorrhage or of right sided cardiac embarrassment.

Variations in pressure may be so marked under normal conditions that I have grown very conservative in my interpretation of the effects of any therapeutic measure except rest.

To summarize:—vascular hypertension is a disease entity characterized by the symptoms and signs I have mentioned. It can be recognized by clinical methods but more readily by tests of renal function. It is distinct from chronic Bright's disease. It is curable in the early

stages. You practitioners are the only ones who see the patient in this stage and it is up to you to recognize the condition and cure it.

CASE REPORT.

By DENNETT L. RICHARDSON, M. D.,
Providence, R. I.

T. C., 10 years old, ill five weeks, was admitted March 30, 1920, and discharged April 3, 1920, against advice.

F. H. Three children. Other two are well.

P. H. Negative.

P. I. Has been ill five weeks and confined to bed. Rather acute onset; at first complained of soreness around the scrotum—; examination by parents showed nothing; next day was confined to bed and could not walk. Developed slight fever—then chief complaints were pain in stomach, head, back and legs. Would cry out at times, and at other times was "sleepy." Was well until onset.

P. E. Well developed and poorly nourished male child of 10 years of age; semi comatose most of time; at other times of slow cerebration and slurring of speech. Makes occasional grimaces at times of contractions, as though in pain.

EYES. React to light and distance, pupils equal, no nystagmus, reflexes all present.

EARS. Negative.

NOSE. Deviations of septum to left, nearly occluding that nar. Septal ulcer on right.

MOUTH, ETC. Negative. Pharyngeal and all reflexes present.

HEART. Sounds faint but regular, tension fair.

LUNGS. Harsh breath sounds in bases posteriorly with sonorous and sibilant rales and fine crepitant rales by enforced breathing.

ABDOMEN. Not scaphoid; recti abdominalis rather rigid; reflexes absent.

EXTREMITIES. No rigidity of neck; irregular involuntary clonic contractions of legs and feet with occasional contractions of arms sometimes elicited by pressure on nerve trunk. No retraction of head.

NERVOUS SYSTEM, otherwise. No Koenig, Babinsky slightly present, Oppenheim not obtained, inco-ordination of both legs, heel to knee. Finger and nose test good; no loss of

pain or pressure sense over entire body, but reflex action is retarded.

Cremasteric reflex absent. Alternate (most of time) involuntary contractions of recti abdominalis in conjunction with transversalis abdominalis of same side; giving sacrum a twisting motion; these contractions continue while asleep. Knee jerks absent.

Involuntary micturition and defecation.

SKIN. Several small blebs, one on right thigh caused by extraneous condition; another about size of dime on dorsum of right second toe, another just appearing on mid dorsal region of left foot.

NOTES. Temperature between 99° and 102° for first five weeks.

March 31. Spinal fluid slightly under pressure, but clear; cell count 20, negative for T. B. and Wasserman. Blood culture negative. Urine shows large trace of albumin. Esbach not done.

April 3. Discharged against advice.

DIAGNOSIS: Lethargic Encephalitis.

LETTERS TO THE EDITOR.

To THE EDITOR:

To-day is hot, 90° F. and after the cold weather we found in Japan, I thought tropical weather would be very acceptable. It is so hot to-day, that we cannot go out much till late this afternoon. This morning Mrs. Rogers and I rode into the city (we are on the Bay about a mile from the business centre) where I bought a straw hat and a box of cigars and we were then ready to ride back. We started out this morning in one of the native carriages, seating two and the driver upon the dashboard, with very small native horses. When I got in he balked and wouldn't go at all. Then he began to dance and shy and we piled out and took an automobile.

Have not yet had an opportunity to get much idea of Manila, but it seems good to be under the American flag once more. I never liked the Japs anyway and I think less of them and more of the good old U. S. than ever before. Will probably have a chance to add to this letter before we leave, as we stay here till March 1st. Then we take another steamer—the Fushimia Maru to Hongkong—and then after a week

there we board the Empress of Russia for Shanghai. I wrote you a long letter from Yokohoma and I think told you about our visit to Mr. Ausno's residence for tea. We spent four days in Yokohoma and then went to Kobe through the inland sea of Japan. Unfortunately we sailed late in the day and could only see part of the beautiful scenery that afternoon and early the next morning. We passed Shinoneseki about 7 in the morning and then were in this yellow sea till we reached Nagasaki. At times we were within a few hundred feet of the shore with towering mountains on both sides and all bathed in that beautiful purple haze with gray background which is characteristic of Japan. We passed hundreds of little islands and thousands of Japanese junks with their curious lantern sails and sampans by the hundreds.

Every bit of tillable land is utilized and the natives are crowded together like chickens in a coop. We spent two days in Kobe. One unfortunately was very rainy and we did not go ashore but the second day we took rickishas and rode about the city of 700,000 population. Had lunch at a hotel and came back to the boat in time to sail at 4.30 P. M. The women spent most of the time in the shops, but Dr. Peters and I walked to a hotel in the foot hills—the Tor Hotel—which was a wonderful place in a garden of several acres with fountains, waterfalls, Japanese bridges, shrines and temples. When we walked back we went into a public school and saw several hundred children go through their drills, showing evidence of German influence, as the goose-step was much in evidence.

We saw many curious sights in the poorer part of the city through which we walked. One in particular impressed me. We saw a woman draw water from a public well and wash her dirty clothes in the bucket, and then a man fill his water bag for drinking purposes without even rinsing the bucket. The children are cute, but all look alike and dress alike and most of them have skin diseases which render them unattractive.

We left Kobe at 4.30 and reached Nagasaki the next day about 5 o'clock. This is the city of all the Japanese shipbuilding and the harbor, which is wonderfully protected, is strongly fortifi-

fied and no cameras are allowed. If one is seen with a camera it is taken from him and smashed and he is arrested. The ship does not dock, but while at her mooring there are on each side about 50 big lighters carrying about 20 tons of coal. A sort of slip is let down for six or seven ports on the ship. Men form lines and while some shovel the coal into baskets (about 25 pounds) these are passed from hand to hand till they reach the ship. The last one empties the basket into a big hopper and with one motion hurls the basket back into the barge. They keep this up for all day, apparently free from fatigue and average about eight baskets every ten seconds. With about 16 crews working and from 20 to 30 in each crew, 2,000 tons are put on board in about eight hours.

A woman gave birth to a child, while working some time ago, and after an hour or so resumed her place in the line. On shore we saw many of the same sights. We visited a Buddha temple and a Shinto temple, bought curios. I stole a prayer paper from a shrine, and came back on the boat for sailing.

Manila is four days from Japan. When we reached here, after 30 days in the Tenyo Maru we had covered nearly 3,000 miles. We have gotten well acquainted with the passengers and found some very congenial friends and time passed very quickly. We have had an unusually smooth passage, although it is never very smooth on the Pacific, and have grown attached to the ship, and rather hate to leave her. Yesterday the Captain invited all our party to tea in his private quarters, and we had a pleasant time. He showed the women about the bridge. This was an honor not shown to any one else on board, though some of the rest seemed rather envious. There was one girl coming to Manila to get married and expected to meet her fiance on the dock. One day she foolishly told some of the women on board how nervous she was and said that she had never been kissed in her life. The news spread all over the ship and we all lined up at the rail to see the meeting. He was waiting for her at the foot of the gangway and the way be grabbed and kissed her would be worth a fortune on the screen. The hundred or so spectators gave a shout that must have made her jump. I saw her this morning

on the street with a great bunch of flowers, so I think she was married last night. It is time for tiffin, which means lunch, and afterwards we are going for an automobile ride, so I will quit for the present.

Yesterday morning we wandered around the streets and at 2 o'clock we took an automobile for a ride. About an hour later we went by crowds of natives and found that being Washington's Birthday, there was a big cock-fight, and so we went. It was like the grounds of a circus. Crowds of natives with stands of food (so called) and drinks. We climbed a rickety pair of stairs, through shouting, sweating crowds of natives to a private box overlooking the arena. There were not far from 2,000 around the pit all shouting and betting. Then a bell rang and two natives brought in two game cocks with sharp razor blades strapped on as spurs. They would grab one cock by the tail and push him towards the other till they got fighting mad. Then each took his pet and holding the head, allowed the other to peck him in the neck and get a taste of blood and then when the bell rang again they went at it. We saw two mains. The first one lasted about three minutes before one was killed, the other less than half a minute. Not very exciting unless you had a bet on, but interesting for a little while. I lost a peso by betting on the wrong bird. Then we drove some miles along the Pasig River and saw dozens of women in clouts doing their washing in the stream by beating the clothes on the rocks; and curious shaped boats loaded with produce on their way to town with long outriggers to keep them from tipping over. Then to Fort McKinley, where 10,000 U. S. troops are stationed and at 4.45 we arrived at Bilibid prison to see the "Retreat"—one of the sights of Manila. There are about 5,000 prisoners and 700 lifers. At this time of the day they all parade and go through their drill, some in blue, some in brown, and others in stripes, according to their behaviour. Eight were in white straw hats,—the only European prisoners. They had a band of about 60 and a troop of a hundred, all prisoners, that went through a very elaborate drill. Then all saluted the colors and filed by for supper. Those who were undergoing punishment, got none. This

morning we went again to the prison and I bought a lot of furniture made by the prisoners. It will be made and shipped to me some time this fall. This morning we had to get our passports vised. To-morrow we are going to drive to Cavite to see the Naval Station and Thursday to a mountain resort where we shoot the rapids a la Au Sable. The next day we go to Bagin to see some of the native negroes and their primitive way of life.

Manila, P. I.

February 22, 1920.

F. T. R.

TO THE EDITOR:

Since writing from Manila, we have had a strenuous time. Last Thursday we started in an automobile for Pagsonham, about 80 miles south of Manila, over very good roads and through great fields of rice and sugar corn, until we reached the foot hills where we began to see tobacco. About 40 miles out we passed Los Banos, where there are hot springs, and we stopped for a while and then went on up the mountains. At Pagsonham we had lunch at a native hotel, incidentally a wonderful cocoanut pie, and then we all dressed in our pajamas, (the ladies wore bathing suits) and the auto took us over to the river where we all got into dugout canoes with native paddlers, one for each boat. We started up the river, and after about two miles we struck the rapids and for two hours we went through the most wonderful scenery I ever saw. The river is not over a hundred feet wide, through gorges two or three hundred feet high covered with the most luxuriant tropical vegetation, with brilliantly colored birds, and the sides lined with beautiful flowers. When we came to a rapid the boatmen uttered weird cries and drove the canoe (hollowed from one trunk about 20 feet long and 20 inches wide) as far into the rapids as they could and then they jumped overboard and stepping from stone to stone or wading in water up to their shoulders, pushed the canoe through the rapids. At times it was all they could do to keep the canoe from turning turtle and starting down the stream. Then they would come to a smooth bit of the river and they would jump in and paddle a while till they came to another. We went on for an hour and a half, soaked to the skin all

the while, till we had passed six rapids and came to a waterfall of about 400 feet. The water was so high it was not thought safe to go farther and so after a little rest we all started back. It was some sport. We would shoot into the rapids and at times clear out of the water and with the boatman shouting all the while and steering skillfully. We passed between rocks and over shallows half filled with water and in ten minutes we had passed what took us two hours to ascend. We were in the canoe three hours wet all the while and we were all badly sunburned.

I had no idea there was any such scenery in the Philippines, but the next day we saw even more wonderful views. We had our breakfast at the hotel at 6 o'clock and took the train for a place in the mountains 130 miles north. We made up a party of 17 and Mr. Stone got the Governor's private car hitched to the train. We had a nice lunch and although it was very hot and dusty it was an enjoyable ride. We left the train at Maryarben and took an automobile for Bagnoi, the summer capitol of Luzon. It was a wonderful ride through towering mountains, across chasms hundreds of feet deep and around mountains thousands of feet high. We went in three hours to Bagnoi, more than a mile high and out of the heat into the pine forests and delightful temperate climate. We had an excellent hotel and the next day we spent riding about the mountains on wonderful roads to the various places of interest. This is the home of the Igorots and we saw them in all their native savagery. Stark naked save for a breech clout, perfectly formed specimens, and now a very industrious race and excellent workers. We saw them in their native homes, Nippa stacks built up on stilts and reached from the ground by a bamboo ladder. They eat dogs and as Sunday was the big dog market day we saw dozens of them climbing the mountains with six or eight dogs on a leash ready for the market Sunday morning.

That day was the birthday of one of the party, and we gave him a little dinner. The table was beautifully decorated with all sorts of flowers, bowls of roses with electric light beneath them, showing their colors beautifully, and just as we were seated, there was a wild hubbub

and in came two Igorot natives in their own costumes of a red sash, beating a big drum and leading a dog which they presented to him. Later in the dinner they came in with an enormous birthday cake, and paraded around the table with a big tomtom and dancing their war dance. This was a surprise and everything went off beautifully. Later they danced till midnight.

At 5 o'clock Sunday we had breakfast and went to market to see the natives and the dogs. At 7.30 we all got into a big French automobile and began the descent of the mountain by another route. We came down just a mile in an hour and a half and boarded our car at Bauang on the China Sea. We had a long, hot journey back to Manila, but after a dinner at the Poodle Dog, a restaurant of some note, we went on board the "Fushimi Maru" for the night. It was very hot. Yesterday we sailed at noon for Hongkong.

S. S. "Fushimi Maru", March 2, 1920.

We had difficulty in getting hotel accommodations in Hongkong and so came to Canton last Wednesday; go back to Hongkong to-night. The trip is a hundred miles up the Pearl River on a very good boat but the river is so infested with pirates that there are two armed guards on deck all the while. The coolies are shut off from the main part of the boat by heavy iron gates. We have suffered greatly from the cold, coming from the heat of Manila and unfortunately we had on thin clothes, and our trunks were left in Hongkong. In our rides about the city we were very cold and the hotel is not heated. To-day it is a little warmer, but I am sitting in the writing room with my overcoat and hat on.

We are in the heart of south China and the sights are so varied and so interesting that I can hardly describe them. We ride about in Palanquin chairs on the shoulders of coolies. I was so heavy I had to have four, and the four men got only 20 cents an hour. The streets are very narrow, at times we were unable to pass other chairs. They average not over six feet in width and are crowded with natives all uttering shrill cries. There are stores on both sides, usually in guilds and markets showing rats, chickens, meats, entrails, snails, cockroaches, considered a great

delicacy, then fish, shrimp and all sorts of cakes of bright colors. Ivory shops where they carve beautiful objects, jewelry showing pearls and jade, (which by the way is very expensive.) Wood carvers, lacquer makers, silk embroideries and thousands of other things we never see at home.

To-day we visited the Canton Hospital and have strolled about with our guide. There are over 2,000,000 people crowded into the small city and 250,000 live all their lives on little boats. The children have pieces of wood strapped to their shoulders in case they fall over-board, and the cats and dogs are tied to the roofs of the sampan, or egg boat, as they call them. In front of our hotel, on one of the canals, there are at least 300 of these boats crowded together; some have families of eight or ten, and it is a common thing to see children of five or six, with a baby strapped on their shoulders working at heavy oars or poling the boat along. They cook in little charcoal stoves on the stern and sleep on a bamboo platform partly protected by a bamboo roof. Some are clean and have various colored hangings, but the majority are filthy and dirty as the Scallop-town natives. Cripples abound and there are scores of blind to be seen tapping their way thro' the crowded streets, uttering shrill cries. The weather has been overcast and cold. To-night we go down the river to Hongkong and to-morrow take a trip to Macao, the great gambling place. We went into a Chinese gambling place this morning.

Canton, China, March 6, 1920.

We left Canton Saturday night at 5 P. M. and reached Hong Kong about midnight but stayed on board till morning. It was a very good boat and compared favorably with our Sound boats. We had a large, airy stateroom. Have learned to like the curry and rice they serve everywhere. They give you a plate of rice, and then you add a curry sauce with hard boiled egg, then some chutney, some pickle, sliced bananas, grated cocoanut, and dried fish and mix it all into a thick mass. It is really very good, but you want to eat it with your eyes shut. At 9 yesterday we went on board another large steamer and went to Macao, a Portuguese con-

cession on the China Sea, about 40 miles from Hongkong. It is called the Monte Carlo of the Orient, as it is filled with gambling houses and opium dens, about the only place now where opium is sold openly. We took a ride of about 10 miles in rickisha chairs with two coolies to each chair; went into a gambling house and saw the inside of an opium joint with several men stretched out after hitting the pipe. Came back to Hongkong in time for dinner. This time we had good rooms, or as good as they have them, for they are bare floors, scanty furniture and about on a par with a dollar a day hotel, at home. The table is excellent and we have enjoyed eating again, although we long for a good drink of water. We have tea every afternoon and are getting fond of it. Hongkong is a cosmopolitan city of about half a million and from the window where I sit, I can see passing in the streets—English, Chinese, Japanese, Russian, Hindus, Indians, and Malays, all curiously dressed, and the streets are filled with them. A Chinese funeral has just gone by with gongs, image, hired mourners—making a hideous din. They had one here on Saturday that cost \$100,000.

Every foreign visitor to the United States is asked by the reporter, "What are your impressions of America?" and when I promised to write you my impressions of the Orient, I did not know I was going to have so many.

Every day something new and novel; some strange sights, curious scenes and odd customs, crowd one another so rapidly that it is a physical impossibility to adequately describe or even mention them. Even the sea voyage just completed of over 9,500 miles from San Francisco to Honolulu, thence to Japan—to Manila and then to Hongkong, on our way to Shanghai, has been one continual delight, and to those who love the sea, a never to be forgotten trip. Even my friend Peters, a notoriously bad sailor, has done justice to every meal, sleeps from 10 at

night till 8 in the morning, and takes a nap of a few hours in the afternoon, reads with comfort, smokes a good deal and also drinks a little, for we are no longer in prohibition territory.

At Honolulu Dr. Hanchett, a former interne at the R. I. Hospital, met us, and the day spent under his guidance gave us a new idea of this, the first of our insular possessions to visit. The Pali, the Punchbowl, the delightful climate, the native Hawiaan costumes, the growing wealth and importance of the Territory, its fruits and flowers, if adequately described, would fill a book, but our stay was limited and on January 29th, we started on our long trip across the Pacific and believe me it is some ocean. Ten days at sea, 3,500 miles sailed and never once till the day we first saw the Japanese coast, did we sight a ship. A congenial ship company, deck sports, moving pictures, concerts, whist, made the days pass quickly and on February 10th, at 8 P. M., we landed at Yokohoma and got our first glimpse of the Orient. Although this preliminary visit to Japan included Yokohoma, Tokio, Kobe and Nagasaki and my impressions are most vivid, I refrain from writing them, because later we spent a month in this island.

F. T. R.

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EDITORIALS

HEALTH INSURANCE.

The medical profession of this country would do well to give its attention to a sociological question which will very soon be pressing for solution, and which will affect our future welfare and happiness more than any other matter of legislation which has been proposed for many years. The subject of health insurance was thoroughly discussed before the House of Delegates at the recent

meeting of the American Medical Association in New Orleans, and that legislative body overwhelmingly voted that such legislation should not be endorsed at the present time.

The subject was further threshed out at meetings of several associations which met in New Orleans at this time, such as the Association of Industrial Physicians and Surgeons, The American Medical Editors' Association and in some of the section meetings of the American Medical Association.

It was the opinion of the majority of those who discussed the subject intelligently that

health insurance would work untold hardships on both the patient and the medical profession. The most convincing arguments were brought by an eminent medical statistician who spent many months in the countries of Europe where health insurance is in force, studying the situation.

Of the many salient points presented, we select the following: In case of illness the patient is obliged to call the panel physician for his district, and if dissatisfied with him, he can call another physician only after giving six months notice. Until recently in England it was necessary to wait one year. It would seem to be a fundamental law of human justice that a patient has the inalienable right of changing his physician whenever he is dissatisfied with the treatment he has received.

Looking at the other side of the picture the post of a panel physician is reduced to that of a petty clerk. His income is prorated according to the amount of work done and time consumed. If he makes a call five miles away the mileage allowed is more than if the call is one mile distant. If the road is poor he is allowed to charge more for that reason. If he dispenses four ounces of medicine and has only an eight ounce bottle for a container, he must explain the reason for using a larger bottle than is necessary. His life is a burden because of the immense amount of time consumed in calculating petty details like the above. His prescriptions are subject to scrutiny by a pharmacy board and he may be summoned before them to account for the use of an expensive drug. The pay is paltry in comparison with the time given, although the emolument has been increased several times. These few concrete examples have been given rather than generalizations because they serve to drive home the lesson that health insurance will make a slave of the medical man, and a puppet of the patient.

As nearly as can be determined, the promoters of health insurance in this country are seeking to have such legislation enacted for purely selfish reasons. They are politicians, demagogues, physicians seeking a job under the provisions of such an act, industrial engineers, a certain type of social worker and legislative cranks. Every unbiased person

competent to judge, whether medical man or laborite, is strongly against such legislation. They agree that state medicine would be eminently more satisfactory. It is well to give our thought to this subject for it is fraught with danger to the body politic. If enacted into law, such legislation would increase taxes to such an extent that the debts of the recent war would seem like a drop in the bucket.

VACATION TIME.

It seems to be a matter of pride with many medical men that they either never take a vacation as a matter of principle or else are too busy to leave their importunate patients. Is this a matter to be proud of or to be ashamed of? It is perfectly proper for the physician to consider his patients in a matter of this kind, but is he treating his patients squarely by not giving his mind and body an occasional rest? Can he not do more justice to his patients by getting out of the rut that every man falls into who does not seek change for mind and body? We are all machines, but the human machine differs from the automobile and similar complicated mechanical wonders in one very important respect—our parts are not replaceable. It is true that a damaged heart can be made compatible with a limited existence; it is true that the kidney can be affected and the owner still be fairly comfortable; it is true that a moderate hypertension will keep within limits if properly handled; it is true that an irritable nervous system may only be a source of annoyance to the owner. Is it worth while for physicians to run the chance and be forced to contend with a damaged organ, when this danger can be avoided?

Many physicians claim that they cannot afford to take a vacation, but, if they considered the matter in the true light, they really cannot afford to continue without a vacation. In the first place they owe it to their dependents that they should keep their body in such condition that their productive years may be many and that their names are kept away from the obituary page of the JOURNAL until they have passed the three-score mark. They also owe it to their patients who have trusted them with their lives that they keep their

minds alert and ready to meet the emergencies of practice. Unless a physician leaves the responsibilities of a busy practice and renews his acquaintance with the best thought of the profession, he is not practicing medicine as it should be practiced. He is either marking time or even stepping backward while the rest of the procession marches steadily onward.

THE DOCTOR AS TEACHER.

The dictum of the late P. T. Barnum that "The public loves to be fooled" has had no greater application than in the treatment of those afflicted with disease. To succeed in fooling the well, ordinarily demands much cleverness and ingenuity, but the sick are all too ready to grasp at any illusion that may offer them comfort and hope and are incapable of critical judgment. It is a matter of common knowledge that fooling the sick is easy and is the profitable occupation of the quack, whose statements are even more persuasive if it be true that to a great extent he fools himself and half believes his own teachings. But in the ranks of the regular profession, the gentle art of keeping the public misled or at least mystified has in the past been found expedient, and we must admit that varied phases of self-deception are represented among us, from the man who is *sure* of the beneficial action of his favorite prescription in the treatment of influenza, to him who can see a fountain of youth in a culture of lactic acid bacilla or make a parasite of a blood platelet.

At the present day, however, a great part of the public has developed a very healthy desire to be fooled no longer, but to know the facts as far as they can be known. The future of medicine lies in the education of the public in medical matters. Campaigns of publicity regarding tuberculosis and venereal disease are a part of this movement, which, when carried out to its logical conclusion, means destruction to charlatanism and quackery. But there is another side to be considered. When the doctor of to-day makes his family visits, he should see to it that he gives his patients as clear and concise a statement of the truth

in regard to the nature of their ailments as is suited to what he thinks is their ability to understand. If he merely looks wise and prescribes treatment and vouchsafes little or no information to his patients, he is shirking more than half his duty. When the public realizes that the medical man is anxious to take his patient fully into his confidence, to play fair, with all his cards face upward on the table, and when the main facts regarding the nature of disease and its prophylaxis and treatment become matters of common knowledge, the death knell of charlatanism, quackery and cults will have sounded.

PROGRESS IN STUDY OF THE NEUROSES.

An interesting and wholesome attitude is apparently being taken towards the etiology of the neuroses which should in the future yield knowledge that will enable the clinician to deal more intelligently with a class of patients that are a source of great annoyance to themselves, their friends and the doctor. Interesting articles upon neuropathology, work in chemical physiology and studies upon glandular activity all point in a progressive scientific direction. To have ascribed the early ideas of grandeur of a beginning paretic to an infection of the brain by a micro-organism would have been laughed at years ago yet today such flights of fancy in a middle aged man suggest at once that a cord Wasserman be done. To transform a myxedematous dullard into a useful happy person by small pills of dried sheep gland would also have been beyond the realm of possibility. Is it then too much to expect that an organic foundation will be found for such a distressing state as an acute anxiety neurosis? A most hopeful incentive for such knowledge is the fact that most neurotics are essentially good, truth seeking individuals and well worthy of all that science can give them in the direction of good health. Undoubtedly the world will continue to produce great numbers of erratic characters who will defy anything more than mere classification but it is likely that the future will see many of the mild neuroses and psychoses put upon such a solid etiology that treatment will be substantial and perhaps really curative in a way satisfactory to the unfortunate individual.

OUR GRAND OLD MAN.

Dr. Horatio R. Storer quietly observed his 90th birthday on February 27, 1920, at his home on Washington street, Newport.

On being graduated from Harvard in 1850 Dr. Storer went to Europe for further study and for a year was assistant to Sir James Simpson of Edinborough, the discoverer of chloroform. Four years later when Dr. Storer returned to America, he did much to popularize the use of chloroform in this country.

He became a pioneer in the modern treatment of diseases of women and built up a large practice. As a result of his work along this line he was made an honorary member of practically all the medical societies of the world. He founded and was long the editor of *The Boston Journal of Gynecology*, the first medical periodical in the world devoted entirely to diseases of women.

In 1872 he became infected while operating. For five years he sought health in Europe without avail and since then has been a semi-invalid.

He settled in Newport in 1877 and still lives there. He takes active interest in every sort of problem and important question and all his life has been a champion of the "under dog."

He founded the Newport Natural History Society. His hobby has been the collection of medals that, in any way, have bearing on medical science and he presented a collection of 2,500 of these to the Boston Medical Library.

Many years ago he began a fight for a constructive policy in medicine. Not only at Newport, but in Boston and other places, he has been an indefatigable worker for methods of disease prevention rather than waiting for spread of the disease. He has never lost his interest in furthering this cause and has recently been given the degree of LL.D. by Fordham University, in recognition of his activities.

Dr. Storer loves Newport, the city he has made his home for the past 30 years. He said: "Many years ago I discovered that Newport is a charming place in which to live, and I then decided to make this city my home." One of the incidents in the making is the fact that he has made it a home for others as well, as the very next door to his own domicile is the home of the Sisters of St. Joseph's Church, which

was formerly his own residence, called "Fairhaven," and which he gave to the Church. The Sisters find inspiration in frequent calls upon Dr. Storer, and several of them called to offer him congratulations upon his birthday.

In politics Dr. Storer has always been a Republican with a leaning toward prohibition.

"I was once a mugwump," said the doctor, in an interview, "and I feel today that we should be more independent in our choice of men to represent us in any form of government." He then went on to tell of some interesting episodes in his associations with Daniel Webster, of whom he was an ardent follower until their political ideas reached the cross roads, as it were.

Dr. Storer is in exceptionally good health, and his optimistic disposition brings happiness to those who come in contact with him. His room at his residence on Washington street faces the harbor, and the view is conducive to study and has been enjoyed by him while preparing many manuscripts.

Dr. Storer received his A. B. at Harvard in 1850, A. M. and M. D. in 1853, and LL. B. in 1868. His achievements in medicine have been of such a nature that for many years he has been celebrated. His personal life, however, is more interesting to Newport, and his home on Washington street gives much cheer to those who call, on account of his remarkable personality.

On March 25, 1920, he succeeded to the title of the oldest living graduate of Harvard University.

SOCIETY MEETINGS

PROVIDENCE MEDICAL ASSOCIATION.

April 5, 1920.

The regular monthly meeting of the Providence Medical Association was called to order in the Medical Library by the Vice-President, Dr. Frank T. Fulton, on April 5, 1920, at 8:55 P. M.

The records of the previous meeting were read and approved.

The applications of Drs. Henry D. Wilson, Alfred A. Calderone, John J. Gilbert and Alfred F. McAlpine having been approved by the Standing Committee and there being no objection, all were elected by an affirmative vote.

The Chairman announced a committee to draw up a memorial on the death of Dr. Harry W. Kimball as follows: Dr. William J. McCaw, Dr. George A. Matteson.

There being no further business the chairman introduced the speaker of the evening, Dr. Lewis Webb Hill of Boston, Massachusetts, who read a very interesting and instructive paper entitled "Acute Nephritis in Childhood".

The subject was thoroughly and practically presented, and called forth an unusual amount of discussion from the members, the following taking part: Dr. H. G. Calder, Dr. W. P. Buffum, Dr. H. Terry, Dr. A. Corvese, Dr. J. S. Moore, Dr. J. E. Kenney, Dr. William Hindle, Dr. F. T. Fulton, and was closed by Dr. Hill.

Dr. William R. White moved a rising vote of thanks to Dr. Hill which was given, and followed by adjournment at 10:25 P. M. Collation was served. Attendance: 39 members and seven guests.

Respectfully submitted,

RAYMOND G. BUGBEE, M. D., *Secretary.*

WOONSOCKET DISTRICT SOCIETY.

The Woonsocket District Medical Society held a meeting, April 22, 1920, at 4:30 p. m. at the office of Dr. Walter C. Rocheleau, Hamlet Ave., Woonsocket.

Paper: "Cardio-vascular and Kidney Disease" by J. V. O'Connor, M. D.

T. F. BAXTER, M. D.
Secretary.

The Woonsocket District Medical Society held a meeting, May 20, 1920, at 4 p. m. as the guests of Miss Lucy Ayers, matron of the Woonsocket Hospital.

Paper: "Recent Post Graduate Impressions and Recommendations for Hospital Efficiency" by William F. Barry, M. D.

T. F. BAXTER, M. D.,
Secretary.

HOSPITALS

ST. JOSEPH'S HOSPITAL.

The regular meeting of St. Joseph's Hospital Staff Association was held at the Medical Library, May 14, 1920, at 8:30 P. M.

Paper by Dr. John H. Homans, Boston, Mass.,

visiting surgeon to the Massachusetts General Hospital. Subject: "Studies in Metabolism".

PROVIDENCE CITY HOSPITAL.

Dr. Merrill O. Parker, left on March 21st, after a three months service at the City Hospital to go to the Manhattan Maternity and Dispensary in New York.

Dr. William Holt began a six months service on April 1st.

BOOK REVIEW

SURGICAL SHOCK AND THE SHOCKLESS OPERATION THROUGH ANOCI-ASSOCIATION. By Crile and Lower. W. B. Saunders Co., 1920.

Drs. Crile and Lower state that they have rewritten their book in the light of the experiences they have had in the war surgery and the corroboration of the principles of anoci-association there received.

As the basis of their theory the authors have taken a familiar theory of the embryologists. Ontogeny is the recapitulation of phylogeny, i. e., the development of the individual simulates that of the race. All our actions follow associative good or bad memories. These may be of benefit and are called beni-associations, or harmful and called noci-associations.

Throughout the race these noci-associations have been followed by attempts to avoid or combat injury and these attempts Crile calls anoci-associations. Motor activity follows the stimulation of nerve ceptors and any such activity causes changes in the cells of the brain cortex, adrenals, liver, etc. Excessive stimulation causes severe destructive changes and we have a state of "exhaustion" or "shock" which is most readily caused by trauma of the parts most richly supplied with sensory nerves. Here follow some interesting observations on the shock dealing effects of different types of trauma and their relation to environmental forces. Crushing and tearing injuries common through the ages are very shocking. The sharp knife or the modern high speed bullet do not act so. Heat has always been with us but the X-ray has not. The first produces shock, the second does not. The abdominal viscera have always been liable to perforations and infec-

tions. Hence pulling on the mesentery which resembles the pulling of distention causes pain although cutting or burning the bowel does not.

Identical changes follow from many causes as emotion, physical injury, hemorrhage, muscular exertion, chemical poisons, etc. When these cell changes have taken place normal muscular or mental energy cannot be produced. They consider these conditions to be the result of an intra-cellular acidosis. Looking upon shock as an interference with the mechanism for the transformation of energy they call their interpretations the kinetic theory of shock.

There are in the book many photomicrographs to illustrate the cell changes via (a) chromatolysis, (b) alteration of nucleus plasma relation, (c) rupture of the nuclear and cell membrane and (d) disintegration of cells.

From experiments the authors conclude that general anesthetics do not break the afferent path from the seat of injury to the brain and cell changes may take place as readily as though no anesthetic was given. On the other hand as emotion may cause the same changes local anesthesia alone is insufficient. The kinetic system can be over activated by both traumatic and emotional stimuli. Hence the complete exclusion of both, will wholly prevent the shock of surgical operations. Their experiments showed that trauma under ether caused greater cell changes than under nitrous oxide.

"On the kinetic theory already enunciated—a new principle of operative surgery has been founded. Every adequate stimulus with or without inhalation anesthesia whether from trauma or emotion predisposes to shock—obviously the only practical method of protecting the brain is the development of an operative technic which will exclude from the brain the stimuli of the special senses and the stimuli of common sensation and the employment of an anesthetic agent that does not harm but rather acts as a protection to the brain cells."

Very careful directions are given as to technic including several chapters on special operations. In general it is as follows: preliminary morphine and scopolamine; nitrous oxide oxygen anesthesia; novocain used as

carefully as though the operation was under local anesthesia alone; quinine and urea hydrochloride in certain cases, careful dissection and very gentle manipulation of tissues.

The authors have evolved a very ingenious theory and adroitly woven with it numerous phylogenetic doctrines and physiological facts.

In some cases where the facts and doctrines are not frankly compatible the condition is not dwelt upon.

References are made to an enormous amount of experimental work. Detailed accounts of such experiments would have made a bulkier and less easily readable book but would have carried more conviction.

Dr. Crile is recognized as a wonderfully dexterous and painstaking surgeon and his results are undoubtedly unusually excellent. Well given anesthetics; attention to the mental and physical condition of patients; intelligent operating with skilful dissection and gentle manipulation of tissues will produce good results even though the kinetic theory is a fallacy.

More detailed proof and the corroboration of numerous sceptical investigators are necessary for the acceptance of the kinetic theory of shock.

P. P. C.

MISCELLANEOUS

A FEW IMPRESSIONS OF THE NEW ORLEANS MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

The American Medical Association met in New Orleans this spring after a lapse of 17 years. During this period the city has changed from one having a distinctly foreign air to an up-to-date American city with a picturesque French quarter and a suggestion of the Spanish occupation remaining in the architecture and names.

Over 3600 physicians registered, the majority coming from the Mississippi valley and the nearby Southern states. New England and the Middle Atlantic states were poorly represented. Possibly this circumstance had an influence in the decision to hold the next meeting in Boston.

The section meetings were well attended and the scientific and commercial exhibits were complete and interesting. Lantern slide

and moving picture demonstrations were held daily and were well attended. The hospitals of the city held clinics on the days preceding the session and drew a large attendance.

Rhode Island was well represented at this session. Dr. Frank E. Peckham presented a paper before the section on Orthopedic Surgery. Dr. Albert H. Miller served as president of the American Society of Anesthetists, which, in connection with several other independent organizations, held meetings several days before the Association sessions began. Dr. Roland Hammond, vice-chairman of the section on Orthopedic Surgery, presided over the sessions of that section.

Several unique entertainments were provided for the guests which were thoroughly enjoyed. The opening meeting was held on Tuesday evening in the Shriner's Temple, St. Charles avenue, which was taxed to capacity, many being obliged to stand throughout the long session. This meeting is always impressive from the distinguished personages taking part, and this year was no exception to the rule.

The President's Ball, held in the Athenaeum on Wednesday evening, was the most characteristic entertainment of the entire session. The hall was decorated with flowers and smilax worked in trellis bordering the dancing floor, with electric illuminations making up a veritable Fairy Garden. The appointments were similar to those given by the Greater Carnival Organizations during the famous Mardi Gras Festival. The programme opened with a magnificent representation in a series of tableaux of Moliere's "La Malade Imaginaire". The cast was composed entirely of physicians, both local and from other states. The costuming was elaborate and the tableaux were presented in strict accordance with the traditions of the classic French stage of the 17th century.

In the second act the King and Queen of the ball, seated on the throne and surrounded by maids of honor and dukes, received the President of the Association. Then followed a Drill by the Shades of ancient physicians, elaborately costumed and representing the medical man from earliest civilization throughout all ages and climes. All partici-

pants were masked and remained so throughout the evening. The maskers then selected partners from special call-out seats and the dancing began.

On the following evening a Fete Champetre was given at the City Park. This beautiful outdoor pageant, illustrating the Aesculapian period of medicine at the Temple of Cos, was staged in front of a peristyle in the park, which formed a splendid background for the entertainment. This consisted of a series of dances and processions with interpretations of the dreams of patients by the votaries of Aesculapius. The cast was composed of medical students at Tulane University and Newcomb College girls. The costuming was in classic Greek style and the lighting effects were very beautifully produced.

Walking trips through the "Vieux Carre"—old French and Spanish New Orleans—were popular, and many quaint spots were discovered strongly reminiscent of the old world. The levees were a source of interest at this time, for the river was at the highest level, except once, in the history of the city. The numerous cemeteries,—one for each church and fraternal order,—were viewed with much interest. On account of the fact that water is found four feet below the level of the ground, it is necessary to use vaults and tombs and place them on the ground. Excellent French restaurants were found in numbers. The viands were novel and delicious, especially the fish and shell fish in which the state abounds. The dishes a la Creole and the French drip coffee will linger in the minds and palates of many a visitor for years to come.

There is a popular misconception as to the meaning of the word "Creole". A Creole is a white person of pure French or Spanish blood, who was born in Louisiana. There is no admixture of negro blood in the pure Creole. The word is a synonym for the best in the state, and hence we have it used for other things, such as "Creole eggs", "Creole chickens" and the like. These people are very proud of their ancestry and invariably keep the shades of their houses drawn and their houses closed except to those who enjoy their confidence.

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A REVIEW OF THE GOITRE SITUATION.*

By M. JAMES SHAUGHNESSY, M. D.,
Framingham, Mass.

The thyroid gland has been the subject for study for over a century dating back to the time of Morgagni and Parry, but it was not until Graves, in 1835, and Basedow, in 1849, contributed the results of their observations to the literature of their day that general attention was directed to the serious disturbance in the organic life of the individual which disease of this organ produces. Still later in the nineteenth century the names of Graefe, Stellwag and Moebius appear, contributing in turn observations still associated with their names. Numerous other names might be mentioned among the Europeans, but when we think of surgery of the thyroid the famous Swiss surgeon, Kocher, stands out pre-eminently as having brought to a high degree of perfection the technique of modern operations in this field. In this country C. H. Mayo, Crile, Ochsner and Halsted have done by far the most important work. With the exception of Kocher, Mayo has done more to advance surgery of the thyroid than any other man and in conjunction with the staff of the Mayo Clinic has contributed much of our present knowledge of goitres and the complex disturbances associated with disease of the thyroid.

Goitres are found in all parts of the country. There are certain sections where they are very prevalent, an instance of which is southern Minnesota, where I spent the past ten years. There the word goitre was almost a household word and we had occasion to observe goitres of every type and to try almost any form of treatment. Little or no attention was paid to them unless the growth was showing marked enlargement, or was unsightly, or toxic symptoms were appearing. The female portion of the population is most affected. It was common for me to

observe practically every female member of many families showing enlarged thyroids. They seemed to be more common in the rural communities. The time of life when they most commonly begin is from 15 to 40 years of age, some of course occurring earlier and some later. It is not uncommon to see quite young girls with goitres appearing after seven or eight years of age and I have seen quite a few new-born babies with fairly sizeable enlargements.

The cause has never been determined but it has always seemed to me the chemistry of the water-supply and of the soil had much to do with it. Some research work has been done along this line and some have written quite interesting reports in regard to this theory. McCarrison believes that it is due to an infection entering through the bowel and Lane believes that intestinal stasis is the cause.

The function of the thyroid is to produce an internal secretion, the nature of which is unknown, but absolutely essential to the normal physiologic processes of the body. This secretion provides a hormone necessary to the metabolic activity of the cell. If there occurs a departure from normal in the production of this hormone, there is likewise a departure from normal in cell metabolism. Sustained excessive production results in hyperthyroidism; sustained diminished production or absence of the hormone results in hypothyroidism, usually referred to as myxoedema and cretinism.

The thyroid under normal conditions carries on its function in an inactive or latent manner. There appears to be provided by nature far more thyroid tissue than is needed for normal metabolism, hence the gland is seldom called on for maximum output. That there are fluctuations in gland activity within normal limits is a matter of common observation. During certain physiologic stages in the sexual life of the female the gland may take on increased activity recognized as normal, for example, at the time of puberty, during pregnancy, and at the meno-

*Read before St. Joseph's Hospital Staff Association, March 24, 1920.

pause. After a time many of these enlargements recede and disappear altogether. Some of them, however, especially in pregnant women, remain permanently as a goitre. I have seen goitres in pregnant women enlarged to such an extent as to considerably embarrass respiration and be a source of much annoyance at the time of labor, but after the child-birth the gland recedes, the goitre becomes much smaller and breathing becomes smooth and easy.

While it is beyond question that activity of the thyroid seems to stir up an activity of the body in general, this seems to be especially true of the other organs of internal secretion. The thyroid seems to act as a stimulant, or as a stabilizer, or perhaps as a neutralizer of the activity of the other glands. Cannon has done considerable work along this line showing an intimate relation between the thyroid and the adrenals, which when induced to a hyperactive state produce in turn a train of effects of their own.

Kendall spent months of work in an effort to segregate this thyroid hormone, finally obtaining a substance in crystalline form which he at first called alpha-iodin but now has given to it the name thyroxin. This substance when administered to myxoedema cases and cretins produces marked improvement in all symptoms. If on the other hand it is administered to normal animals it produces typical symptoms of thyrotoxicosis. The effect of these administrations is latent. There is first noted an increased metabolism as shown by an increase in the carbon dioxide output and increase in the nitrogen elimination. Then there follows increase in pulse rate, increased blood pressure, nervous irritability with tremor, an increased appetite followed later by nausea and diarrhoea, and loss of weight. If the administrations are kept up death eventually follows. An enormous single dose of thyroxin is not poisonous and produces no demonstrable result, passing out of the system without doing any harm. It is the small continued dose that produces the effects of a highly increased metabolism, a typical picture of hyperthyroidism.

The experiments of Kendall show that death results from the secondary effects of thyroxin, also that entire absence of thyroxin is not incompatible with life. If it is absent as in the

myxoedema patient the flexibility of energy output is limited to a narrow range. Their usual existence is at a rate 40% below normal. On the other hand Plummer has shown that hyperthyroid patients show a rate about 69% above normal and when the superior thyroid arteries have been ligated a rate about 35% above normal.

The thyroid is a tubular retiform gland and is derived from the branchial clefts and an evagination of the pharynx at the site of the foramen caecum. It shows on cross section acini lined by columnar epithelium. Into these acini is secreted the colloid. The acini are held together by connective-tissue richly infiltrated with blood-vessels, lymphatics and nerve branches.

Now in goitre something acts as a stimulus to the gland which we may assume is a demand of the body for more thyroid secretion. When this demand arises from normal physiologic causes above the average the tendency is to the development of colloid and adenomatous goitre. If there is a hypersecretion of colloid without increase in the size of the individual cell, colloid or cystic goitre results. If there is an increase in the number of acini and especially those of the fetal type, adenoma results.

If the stimulation is excessive and there results increase in the size of the cell (hypertrophy) or an increase in the number of cells to each acinus (hyperplasia), then we get an increase in secretion of the thyroid hormone, in a thin and more readily absorbable colloid which if maintained over sufficient period of time results in hyperthyroidism.

Goitres are often classified as simple and toxic. Simple goitres include cystic and adenomatous. But not all toxic goitres are exophthalmic. Toxic symptoms may appear as a result of any type of goitre. Plummer recognizes a type of hyperthyroidism which is definitely toxic but does not show a true hyperplasia of the gland substance and to this he gives the name toxic non-exophthalmic to distinguish it from true exophthalmic which does show a true hyperplasia.

The classification of goitres may be grouped under the following headings, apart from the various infections common to other organs:

1. Cystic.

2. Adenoma.
3. Toxic non-exophthalmic.
4. Exophthalmic.

Malignancy involves the thyroid far more than is sometimes supposed. Bouman in a recent article has laid great stress on this point and cites a report of Kocher in 1907 stating that of 4500 operated goitres he found 400 cases of malignancy. Judd reports five cases of sarcoma and 105 of carcinoma from 1905 to 1916. Eight leading surgeons in St. Paul and Minneapolis report 22 cases in five years.

Cystic and adenomatous goitres may appear from the 15th to the 18th years, are prone to give evidence of excessive function from the 17th to the 21st years, enlarge with the high metabolism of pregnancy and may give rise to a damaged heart from the 35th to the 40th years. They predispose but slightly to exophthalmic goitre. Generally speaking the cystic goitre produces no general symptoms. The effect is purely local such as pressure on the trachea, pressure on the recurrent laryngeal nerves causing paralysis of the vocal cords with altered voice sounds, shortness of breath and wheezing, troublesome cough, and unsightliness especially in women. Surgery offers the only means of relief in cystic goitres because the disturbance which they produce is purely mechanical. The size of the goitre offers no special difficulty in its removal.

Adenomata appearing in young girls soon after puberty are often spoken of as goitres of adolescence. They are generalized enlargements of the entire gland although sometimes show enlargement of only one lobe. The course of these varies, many of them disappearing sometime between the ages of 20 and 23. For this reason it is not considered advisable as a rule to operate on cases in this class. This does not always hold true, however, for some of them show toxic symptoms, not true exophthalmic, but still producing quite serious physical and nervous disturbance. Symptomatic treatment frequently is sufficient to alleviate this toxic condition, but sometimes operation becomes necessary for their relief. All of them should be placed under medical treatment for a while to demonstrate that physical rest and relief from mental and nervous strain is not all that is required. They respond readily and improve with the adminis-

tration of iodin and this is about the only class where this holds true.

Cases of hyperthyroidism, as said before, are divided into toxic, non-exophthalmic and true exophthalmic. In the former there is an increased parenchyma by means of regeneration in a atrophic parenchyma or the formation of a new parenchyma of the fetal type. In the latter there is an increased amount of functioning parenchyma, a true hyperplasia associated with an increased absorption (Wilson).

Clinical evidence of this toxic non-exophthalmic group is based on these points which I will briefly point out. First, these cases have their goitre earlier and their toxic symptoms after some years, statistically shown by Plummer to appear on an average at 22 with toxic symptoms coming on at 36.5 years. The corresponding ages for exophthalmic cases being 32 and toxic symptoms at 32.9 years. Secondly, there appears to be a selective action of the toxin for the cardio-vascular system with less obvious nervous symptoms, producing marked myocardial changes, even more so than in true exophthalmic, and resembles quite strikingly the changes associated with chronic alcoholism. Thirdly, there appears to be a continued poisoning without remissions differing from the exacerbations and remissions of exophthalmic type, and leading persistently to permanent damage to the organs most affected.

Exophthalmic Goitre—Parry's disease, Grave's disease, Basedow's disease—this is by far the commonest of the toxic goitres. It has been before the medical world for a century or more. The literature on it is voluminous. Even then no great advance, no really definite and positive line of action was brought to bear against the disease until surgery in this field developed a line of procedure which showed results. Our knowledge as to its cause is still meagre and indefinite. Theories are numerous. Crile holds that it is a disease of the motor mechanism that causes physical action and expresses the emotions; that there is some stimulating emotion intensely and repeatedly given or some lowering of the threshold of the nerve receptors, thus establishing a pathological interaction between the brain and thyroid. On the contrary, it is held by most men that in its hyperactive state

the gland secretes a substance which fails to neutralize the products of metabolism.

Pathologically, it has been definitely established,—and this seems to be all that has been established,—that in all exophthalmic goitres there is a true hyperplasia in the gland. Unless this is present the toxicosis is not exophthalmic even though toxicity accompanies the existence of a goitre.

The clinical manifestations of the disease show a wide variation as to their nature and intensity. It makes quite a difference how long the disease has been in progress, how seriously some of the organs are affected, how acute or how chronic the symptoms appear to be, whether this is the first exacerbation or one following remissions. Nervous irritability, such as restlessness, inability to sit still during an office consultation, a warm flushed appearance of the skin, mental depression and discouragement, tremor, increased pulse rate, are early evident symptoms. At first there may be increased appetite followed later by diarrhoea and vomiting. They lose weight and show fatigue very plainly. Prominence of the eyes,—exophthalmos,—is sometimes present, frequently not. The thyroid may or may not be enlarged as far as one can see, and even on palpation it is not always easy to say that it is enlarged. One of the most toxic cases I ever saw had no noticeable enlargement, yet a fairly well marked exophthalmos; was running a pulse of 140 in bed, and retaining nothing by mouth.

The most constant signs, it seems to me, are mental and nervous irritability and increased pulse rate in one who gives a history of loss of weight and who has a warm flushed appearance of the skin. Such a case would be sufficient for me to make a presumptive diagnosis of exophthalmic goitre with or without enlargement of the thyroid, with or without exophthalmos. Some look for a thrill over the superior thyroid arteries and over the substance of the gland. Metabolism tests are now being made and will be the routine procedure of the future in the diagnosis of this disease and as an aid in determining the degree of toxicity.

The prognosis and treatment of these cases can not be determined by off-hand opinions. Judgment in handling them comes only after watching the outcome of a large series treated

both medically and surgically, and a sense of discrimination between what ought to be done and what the patient can stand. Surgical disasters follow precipitate haste. Lost opportunity follows needlessly extended medical treatment.

The question arises then as to what to advise in a given case. It should be borne in mind that these cases do not require immediate operation, that it is practically never necessary to make emergencies out of them. They can all wait and it is better that they do wait until it has been determined where the case stands—i. e., thinking of the symptoms as ascending and descending curves of a diagrammatic chart, whether they are increasing and approaching the peak, whether they are bad and stationary, or whether they are on the decline. If they are approaching the peak, radical surgery is certainly not to be advised. The case should be placed under medical care, enjoining absolute physical and mental rest as far as possible.

The extent of the nervous and mental symptoms is a valuable prognostic guide as is, of course, the condition of the heart muscle. Severe mental and nervous disturbance is evidence of a severe toxic condition. The degree of myocardial degeneration will depend upon the duration and severity of symptoms, but generally speaking irreparable damage comes only after several years of exacerbation and remissions. Fatal results sometimes follow rapidly after onset in a few months but as a rule it is a much slower affair showing its fatal termination in the form of failing heart muscle.

The time to select for operation is the period when the symptoms are on the decline. Medical treatment consists mainly in rest and relief of such symptoms as arise, using digitalis as indicated, also the bromides or neutral bromide of quinine, which has some advocates and which is of some value. Hot water injections into the substance of the gland is used in bad cases to cause an abatement of symptoms preparatory to surgery. Ligation of the superior thyroid arteries either singly or at two sittings under local anesthesia is the most widely used method of handling bad cases. It is simple and done quickly, but even then occasionally some one dies from this slight interference. Berkman reports a case which died immediately following a

single injection of hot water. So it is difficult to estimate in a bad case how much may be safely done. After the ligations it is usual to wait several months until symptoms have pretty well subsided and the pulse has quieted down and the weight has increased before having the patient return for the thyroidectomy.

The use of the X-Ray is being advocated and it is claimed that excellent results follow. With its use the writer has no personal experience.

The mortality in large goitre clinics is quoted as from 2% to 3% on exophthalmics and practically none in simple goitre cases. In my own work out of approximately 100 cases, 35 of which were in people showing toxic symptoms, only one died. This death was due to a pulmonary abscess which was located and drained but in spite of which the patient died, the operative area having perfectly healed. Most of my cases were sitting up a few days after the operation and some were out of the hospital at the end of a week. In some of the first cases which I did, drainage persisted for a period of several weeks but in most of them the drainage wound was closed before they left the hospital.

The opinion appears to prevail among many of the practitioners of this section that there is great risk in advising surgery in exophthalmic cases and a sort of disposition to let well-enough alone in simple goitres. Occasionally one reads an article to the effect that surgery is never indicated in toxic goitres. Some say the results are poor, while others say that thyroidectomy does not cure the disease because the disease is as much outside the gland as in it.

Whatever the claims of those opposed, basing their opposition on whatsoever grounds, it cannot be denied that some of the most spectacular results in surgery follow this operation. From my own work alone, I have seen sufficient to convince me that surgery at the right time and under the right conditions offers the best possibilities to date. At the Mayo Clinic where I had abundant opportunity to observe and discuss cases and where thousands have been operated they claim a cure in about 87% of their exophthalmic cases, some of the remaining 13% requiring further operation.

If bad results have come in cases of hyperthyroidism in this section, it may have come about from postponement of the operation from

one cause or another until surgery was hazardous. If operation is performed at this time mortality must necessarily be high. Or, if surgical intervention is proposed without a serious effort to discover whether the toxic symptoms are increasing or declining and the surgeon proceeds with his work without placing it under his own observation to determine this fact he necessarily invites disaster. Haste is the last thing necessary in these cases. Metabolism tests are important as an aid in determining the degree of toxicity but this is not the exclusive means, for after all each must be studied as an individual and not as a series of organic tests. One of the most evident and most important signs of severe toxicity is marked cerebral stimulation. This, of course, is relative in the mind of the clinician and presupposes a certain intimacy with a large number of cases of varying degrees of toxicity. Reliance in my cases was placed on clinical manifestations and the case operated or postponed on that basis. In some cases postponement was because of excessive nervous symptoms and in others, where the nerve symptoms were not the predominating feature, to ease up on an overworked heart. The following two cases illustrate these points, the first one showing quite marked toxicity and the second not so toxic but a more or less permanently impaired heart with moderate nervous and mental symptoms.

CASE I. Mrs. M. W., 50 years old, goitre for many years. Toxic symptoms first appeared several years before but in 1917 were quite serious. She lost considerable weight and was put on medical treatment by her physician and kept very quiet. After several months the symptoms subsided. Another exacerbation occurred in the spring of 1918, and on June 1st, 1918, she consulted me for the first time. Very nervous, under considerable mental stress, pulse running about 120, face flushed, tremor, eyes quite prominent, a fairly sizeable bilateral enlargement of the thyroid. She was very thin and stated she was losing weight constantly and had now lost about 40 pounds. She appeared fatigued but wanted an operation right away. She reluctantly consented to go home and go to bed for a month as I was leaving for a month's vacation. On July 15th, the operation was performed under combined ether and local anes-

thesia, her pulse having steadied down to below 100 and the general indications being now better. Her post-operative exacerbation of symptoms was very marked but she made a good recovery, left the hospital in 10 days with a pulse of 80 and in six weeks regained her 40 pounds.

CASE 2. In January 1920 I was asked to operate upon a case of exophthalmic goitre in Framingham. She had been under the observation of the resident physician of her institution for a year. She had moderately marked toxic symptoms, prominent eyes, a fairly sizeable bilateral goitre, and carried a pulse of 120 up and around the ward. After keeping her in bed a month her pulse was 80. I could not now notice any murmurs but when she had a more active pulse, a murmur over the procordia was distinctly audible. The night before the operation she learned from her neighbor in the ward that her operation was booked for the next morning. Her pulse jumped up to 120 that evening and remained so. This is quite a common experience. Even though the mental excitement of the coming event passes away with sleep, the heart once being stimulated keeps up its activity as it did in this case all night.

Her operation went along nicely and aside from considerable mental alertness did not show bad post-operative symptoms but her heart was very excitable for a few days, returning to a state of rest very slowly. Here we were dealing with a heart which was more or less permanently impaired before operation as shown by the great delay in quieting down—a period of about six weeks—while in the first case the heart was rapid and quieted down as soon as the nervous and mental symptoms disappeared.

Regarding simple goitres, it is true that many do not need operation but it is also true, as said before, that any goitre may at any time take on toxic symptoms. Since simple goitres even though very large are safely removed, it is justifiable to advise operation. The following two were cases of simple goitre which later on showed toxic symptoms, the first a colloid and the second a goitre of adolescence.

CASE 3. Mrs. T. B., age 40, goitre for many years, size of a large orange, unilateral. In the spring of 1916, she showed mild toxic symptoms and was advised to have a thyroid operation.

She declined. In the spring of 1917 similar symptoms returned and she promptly reported although she had now lost about 10 or 15 pounds, and was very nervous and showed fatigue quite plainly. As the case was seen quite early and was quite closely under my observation because of nearness of residence, operation was again urged and accepted. She entered the hospital Sunday evening and returned home for the next Sunday's dinner. All toxic symptoms disappeared and she grew heavier in weight than ever, felt fine, and remained so for the remaining years that I saw her.

CASE 4. An adenoma of adolescence showing toxic symptoms on two successive occasions: Miss E. B., age 20, goitre since soon after puberty. In spring of 1918, showed extreme nervous symptoms, loss of weight and some tachycardia. She was given neutral bromide of quinine and iodine for a long time, the symptoms finally subsiding after several months, only to return again in April 1919. As soon as it was noticed by her mother she came to me and arranged for operation which was performed after certain preliminary observations. She made a good recovery after a double partial thyroidectomy. Nervousness had disappeared early after operation but her lost weight returned very slowly. Since I left Minnesota she wrote that she has gained 45 pounds, going from 120 to 165, from April to November, and that she never felt better.

The choice of anesthetic may be local, rectal ether, ether by the usual method, or combined local and general anesthetic. No one method should be used exclusively. It has always seemed to me that if the patient was to be subjected to a thyroidectomy that she should be able to stand a light ether. If she is too toxic to stand a light ether, she is also too toxic to stand a radical surgical operation. The combined local and general is the ideal anesthetic. The local alone is sometimes given, more in the east than in the middle west.

The opinion of those who do large numbers of goitre operations confirms my own, that usually,—not always—it is better to use ether, as the advantages outweigh the advantages of local anesthesia. Practically all of my cases

have been done under rectal, general or the combined local and general anesthesia.

OPERATIVE TECHNIC: A dose of morphine ($\frac{1}{4}$ gr.) and atropine ($1/150$ gr.) a short time before operation is helpful. The patient is placed in the half-sitting position after being etherized. A transverse collar incision is made through skin and platysma and this flap is dissected back as far as the thyroid cartilage. Large anterior veins are divided and tied. The median line of the neck is sought and the two sterno-thyroid muscles separated. Sometimes in large cystic goitres this line between these muscles is pushed to one side. Next the finger is passed under these muscles and they are separated from the underlying tissues. They may now be clamped and divided or retracted to one side. This exposes the anterior surface of the gland; the capsule is torn through and the gland is lifted out of its bed. The superior thyroid vessels are clamped and cut. If these are difficult to get at, a little traction downward on the gland will put them on the stretch and bring them into view. With these divided the gland can now be dislodged downward. Then by drawing the gland toward the trachea it brings into view and puts on the stretch vessels along the middle of the out border appearing from under the sterno-mastoid which is retracted out of the way. Then in a like manner the vessels coming up from below and entering the lower pole of the gland are brought into view, clamped and cut. Now one of two procedures is carried out—either shell out the whole lobe by keeping inside the capsule so as to avoid injury to the recurrent laryngeal nerve and to spare the parathyroids, or leave a portion of the posterior surface of the gland in order to be sure of avoiding these structures. The edges of this posterior portion can then be brought together to close over the raw surface with a continuous suture of catgut which also stops bleeding in this cut portion.

The same technic is carried out on the opposite side and then all bleeding is stopped, paying attention to even slight oozing. The divided muscles are then resutured and sutured together in the mid-line of the neck. A rubber drain is left through a stab wound under the suture line, the skin flap is sutured

in two layers, platysma first and then skin by a continuous catgut subcutaneous layer.

Large cystic goitres have very large surface veins which if torn bleed freely but this can be avoided by locating these first and clamping them. A large goitre will come out easily if it is taken methodically. It is bound down only by its blood vessels so that after they are placed on the stretch and clamped and cut the tumor is easily dislocated from its bed. Some goitres bleed very easily and freely if forceps are caught into the gland surface. Sometimes this has to be disregarded for the time being as the more one clamps the more bleeding is stirred up.

Avoidance of bleeding and trauma is important from the standpoint of avoiding post-operative exacerbation of symptoms. A husky voice following operation for a week or so does not mean anything serious. Post-operative tracheitis is common, also a swelling of the skin flap, both of which seem to come from altered venous circulation. Infection takes place rather easily and a post-operative discharge may persist for a long time. I have noticed much better results by using plain gut exclusively throughout the operation than when I used plain and chromic.

The post-operative treatment is simple. Drainage tube is left in for 24 to 48 hours sometimes only a few hours. In toxic cases it is important to watch the action of the heart. Another important point is that most exophthalmic cases have a severe post-operative exacerbation of symptoms, particularly nervous symptoms. Some of them behave as badly as a bad case of delerium tremens as far as nervous state is concerned. They repeatedly try to get out of bed; keep shifting from one side to the other and sliding up and down in the bed. The heart may act violently. The estimation of this acute upset is important in determining the extent to which a patient may be operated upon and the time for operation. The additional post-operative load may be just sufficient to produce a fatal outcome. The danger lies in the first 24 hour period after which time the chances for recovery are usually good. Most post-operative deaths occur during this interval. I generally use a little morphine to keep them as quiet as possible and digitalin

for heart stimulation during the time of increased excitation.

In conclusion it seems fair to say that cystic goitres and adenomata can be operated upon safely, and no hesitation is necessary in simple goitres. The results should be as good as in chronic appendicitis cases. If recognized operative principles are carried out there is practically no danger. The adenoma of adolescence should be treated first along medical lines. Toxic goitres should be operated upon when sufficient study has been given to determine the type; what turn developments are taking and when medical treatment or ligations or other pre-operative treatment have placed the patient in most favorable condition for operation. To rush a toxic case to operation may spell disaster but it is also unjust to the patient to hold on interminably under medical treatment until conditions are very bad and then preach surgery. When the acute exacerbation has passed is the golden opportunity.

LETTERS TO THE EDITOR.

TO THE EDITOR:

February 19th saw us on another thousand mile trip to Manila and by this time we were so accustomed to great distances that we were speaking of them not in miles but in thousands. As Americans we know but little of the Philippines and do not appreciate their value, their enormous economic productions or their strategic position, but every day since leaving the United States, we have been impressed with the growing power of the Japanese, and of what it would mean to them to have possession of these islands. Our stay of eight days gave us an opportunity to see some of its resources, to visit the rice and sugar plantations and a trip some hundreds of miles in the north of Luzon, a chance to see some of its natives in their original state. The Igorots, once a warlike tribe in northern Luzon, are now rapidly becoming educated and civilized, although they still persist in their former manner of dress and mode of life. At last we reached the first stage of our visit to the Orient and entered China at Hong-kong and now for the impressions.

Kipling in one of his poems says—

"It is not good for the Christian's health
To hustle the Arian brown
For the Arian smiles as the Christian riles
And he weareth the Christian down.
And the end of the fight
Is a tombstone white
And the name of the late deceased
And the epitaph drear
Is a Fool lies here
Who tried to hustle the East."

The truth of this was evident from the first day in China. Everything was reversed and exactly opposite to what we were accustomed to see.

China is choked with the most ludicrous incongruities which must be assimilated before there can be an appreciation of a really wonderful country and more wonderful people. They reckon time as occurring in such and such a year, and of such and such an Emperor, by a "time style" which is frequently changed. Tomorrow means any day in the near future and hours are expressed as the time it takes to "drink a cup of tea", to "shave your head" or to "burn a joss stick".

North and South China are as different in language as France and England, and the Manchus, the Mongol and the Chinaman are very different folks. The central authority at Pekin does business with the outer world but that is not China, and its real problem is the lack of a common language. Seven different languages, not including a score of dialects, are spoken in China, and natives of one province are unable to converse with those in another. As a result there are scores of petty mandarins with kingly powers and in addition there are three distinct written languages.

Owing to the absence of railways, the rivers and canals have played a prominent part in the creation of these special populations and the Junk and Sampan dwellers might almost be said to form a race in themselves, for millions of these dwell entirely on these little crafts, often less than 15 feet in length. They marry, rear families and many never from birth to death sleep elsewhere than on their boats, curling up like a bunch of puppies on the deck or crawling into a small cuddy hole below the short bamboo deck. In this tiny space the whole domestic life is carried on, birth, sickness and death, all take

place without privacy, under the small matted shed, about six feet by four. They are a cheery race, usually devoted to their families and children, although girls are unwelcome.

At Hongkong there is an estimated population of 200,000; at Canton 250,000; and Shanghai 100,000, and when one considers that there are several thousand miles of navigable rivers in China and nearly a thousand miles of the grand canal all teeming with boat-life, some idea of this phase of Chinese existence may be imagined.

The homes of wealthy Manchus contain priceless embroideries, exquisite bronzes and wonderfully carved ivories, while both men and women adorn themselves with gorgeous robes. Such a house was visited at Macao and every room was a constant source of delight. In town the poorer population is packed in rows of narrow streets like sardines in a box. They are not provided with heating or cooking apparatus save a brazier of charcoal. Oiled paper takes the place of glass in windows; the partitions are bamboo screens. There are no pictures nor decorations save the family coffin which has a place of honor in every Chinese home.

Clothing when worn is of the universal ramie cloth and has no style, being considered bad taste to reveal the shape of the body. Men marry young and there are no bachelors, and while monogamy is the rule, one may take as many concubines as he wishes. No woman may remarry. As a wife she is the slave of her husband and what is more dreadful, a slave also to her mother-in-law, who is by far the most important part of the Chinese household. The position of the wife, is, however, improved by the advent of a son and she is only regarded in any other light, when she also becomes a mother-in-law and vents her spleen on the young bride, much as sophomore chastizement is handed down to the freshmen, who in turn punish future freshmen.

Failure to bear children is considered a cause for divorce, but over-talkativeness or "too muchee Choberry" is more potent. Men and women do not eat together, her clothes must not hang on the same hook, nor should she ever occupy his chair. Altogether, the life of a Chinese woman is not over happy. Foot binding, although on the decrease, is still prevalent and the Chinese are wont to say that compres-

sion of the foot affects no vital part, whereas tight corsets may produce grievious results.

The birth of a child is attended by strange ceremonies, no clothing being provided other than that of its relatives. At one month the child receives its milk name, but subsequent birth-days are not observed until after his marriage, often at the age of 16, and this custom allows the girls to be any age they wish until married. A convenient thing for some of the maidens in our own land.

The "baby tower" is still in use where undesirable female infants are placed on a ledge outside a small window of the tower and allowed to perish, unless pushed off by some other hard-working parent, who also has a girl to dispose of.

One suffers greatly from the cold. There is no means of heating, save miniature grate fires, and it was a source of amazement to me to find the coolies clad in a shirt and trousers, and barefoot, as indeed, are most of the inhabitants; yet they did not seem to suffer as did we in heavy clothes.

Fortunately we were not confined to Chinese food, but in our strolls about the markets of Canton we saw exposed for sale, rats, entrails, cockroaches, eggs as black as tar, which had been buried for years in the earth. They make an especially attractive soup from pigs bladders containing residue urine. Birdnest soup and pudding and shark fin soup are great delicacies.

The modes of conveyance are also unique. Rickshas, palanquin chairs, wheel-barrows vie with automobiles and it is a sight for sore eyes to see Peters and myself borne aloft on the shoulders of four big coolies, gaily promenading the boulevards.

In commercial life the Chinese are past masters, but withal honest and a Chinaman's word is as good as gold. Every purchaser soon finds that the first price quoted for an article is merely by way of introduction and unless you haggle and beat him down he does not consider you a good client. One day while with a guide I priced a Canton water pipe. Five dollars, he said, was the lowest he could sell it for and keep out of the poor house, and he let me go on without consummating the purchase. The next day I strolled casually by and pointing to the pipe, I offered him a dollar. After some haggling he

took a dollar and twenty cents. The same is true of all commodities, one ultimately pays about one half the asking price, and even then we pay twice as much as the article is really worth.

Trade unionism is a modern theory, but there are guilds in China, thousands of years old. Even beggars have a guild with chiefs and rules of procedure, and all vendors of one class of goods are grouped in the same street. If a member of a guild cuts prices or breaks some of the rules, the beggar guild is called upon and they patrol the street in front of the door of the offender and make themselves so obnoxious to intending purchasers that they are soon glad to come to terms. The abacus is universally used in computing, and with it they are wonderfully adept and quick in doing their mathematical calculations. They will give you the sum of a number of articles quicker than you can write the various items, but it is wise to take their prices with a grain of salt, for there are currencies and currencies in every province, big money, little money and daily quotations on exchange which are very confusing to the occidental. Some of their bills are curious specimens, thus one I saw rendered for the manufacture of a wooden box was—

Wong Hing.

Two boxes to order.....	\$5.00
One wood do.....	2.50
One wooden do.....	2.50
	—

Translated into English it reads—

Two boxes to order,
One would do

One wouldn't do and the price of one box was \$2.50.

Another was for a horse hire—

Chee Lung.

Asofadd	\$.50
Asosier	3.50
Alakimomagen	1.00
	—

again translated it was—

A horse feed.....	.50
A horse hire.....	3.50
Taking him home again.....	1.00
	—

At the hospital fever was described as "b'long inside too muchee hot"; up stairs is "topsides"; down is "bottomsides"; at home is "got". So that asking if Mr. A. is at home, one says "Master got". If not at home, he says, "Master

no got". After trying to talk "pidgen" to one of the coolies, one wonders if he ever will be able to converse with friends when he reaches home.

In the streets are seen hawkers of every sort, selling bird cages, cockroaches, letter writers, barbers and dentists, and to-day I saw a D. D. S. pulling worms from the teeth of a coolie, at least he said he was and the coolie believed him.

To a foreigner, the outstanding characteristic of Chinese art is imitativeness. The Chinaman is extraordinary in the deftness of his fingers and reproduces articles of virtu with great exactness. The bronzes, lacquer and native china are peculiarly rich and beautiful and time is not considered in gaining the perfection they desire. An embroidered table spread which was sold for \$90 represented three years of labor and in making the inlaid gold work it is hammered into the bronze with infinite patience. These rarer specimens of Chinese art are not displayed to the casual customer, one has to gain the confidence of the merchant before he brings out his rarer treasures. One shop in Canton makes wonderful jewelry by dusting minute feathers on silver, held in place by glue, and then covered by a transparent lacquer. The final result is a mass of color and a wonderful representation of animal life or vegetation. Another paints on the thinnest rice paper. Carved ivory, amber, silks and embroideries so charm the tourist that he has to leave his money at the hotel to avoid constant buying.

Shanghai, China,

March 14, 1920.

F. T. R.

TO THE EDITOR:

Another new impression is added to my list. China is one vast grave yard. The ride from Shanghai over 800 miles is through level plain, dotted on either side as far as eye can reach with the curious dome shaped mounds where the Chinese bury their dead and worship their ancestors. Every available inch of land in and around the graves is under cultivation. In a strip some 800 miles long and 400 wide, save where there are villages or graves, there is no waste land. China can supply the world with wheat, if modern methods are used. The land is fertilized by winter growing nitrogenous plants and ashes are sowed by hand in drills,

cultivated by large hoes and rakes, watered by carrying from wells or rivers, in water boxes strung over the shoulders of the coolies, cut by hand in little tufts of grain and threshed by flails. There are millions of men who do this, and the aggregate is of course, very large.

After riding 24 hours in a Chinese sleeper and eating Chinese cooking, I am not surprised that there are so many graves. The Chinese are poverty stricken and filthy, but industrious. Some of the bundles of rags we have met seem scarce human. Beggars abound and cripples are everywhere. At Shanghai when the ship came to anchor, we were immediately surrounded with sampans and great nets were spread over the outlets for sewage from the ship and every bit of garbage from the kitchen and all refuse from the toilets was carefully collected and spread upon mats to dry.

Peking has the oldest newspaper in the world, the Peking Gazette, but journalism is not very remunerative. A rough copy will pass from hand throughout an entire section. Moreover, on the streets are public readers who for a little cash will read aloud to the assembled crowds. The issues are irregular, reminding me of the publications of the State Board of Health, and like that journal in past days, they are freely used to pay off personal grudges,—a legitimate proceeding in China. A recent issue contains this advertisement: "This Gazette will contain all that it is fit to know, therefore all will hasten to purchase it.—Nothing political or trifling will be permitted to appear and all jokes, detraction of character, improper discussion of State affairs and all things strange and impossible will be rigorously excluded. Bribes will not be permitted".

The Chinese are very fond of flowers, and often amidst surroundings of filth, with garbage scattered about, there will be a profusion of flowers, diminutive shrubs and plants trained in fantastic shapes with charming bridges over minute streams and a microscopic rookery producing a great contrast with its general surroundings. Azaleas, poinsettias, jasmine and oleanders are in profusion, although there are no flower festivals as prominent in Japan. This idea of beauty, is different from ours, exact patterns and the trimmings of hedges into shapes of animals is peculiarly Chinese, but in view of

their general superstition regarding devils and spirits the trend of their gardening is easily understood.

There is no religion in China, and their general "isms" exist side by side, beside the numerous llama temples. Confucianism is a system of moral philosophy, that commends itself even to the occidental. Its gospel is contained in the classics which every educated Chinaman spends most of his life in learning or at any rate did spend most of his life. With the abolition of the examinations in 1906 many of the formalities of obtaining a degree have been done away with. On it was grafted the ancestor worship, which forms a part of every Chinaman's life and their reverence and worship is more like a national memorial than a religious service. It involves a good deal of kowtowing and the burning of incense. At Nanking, where we had an opportunity of witnessing worshippers at their devotions, their obeisance was followed by the shaking of a box containing a number of sticks. When one fell out it was handed to a priest who took a corresponding paper from a rack which was an answer to its prayer. Sometimes they are dissatisfied with the result and transfer their devotion to another image, hoping to get a better answer to their prayers.

Taoism is more of a religion and when a Chinaman comes to the point of death, he relies more on its priest than he does on Confucianism.

Buddhism is found everywhere, the pagodas being constructed in the peculiar form so often seen in pictures, but few are of recent date. We have visited several that antedate the Christian Era. On the whole, I had rather have one Chinaman, than a score of Japs, and I doubt if a letter mailed in Japan which expressed my real sentiments would reach you, for they are a suspicious lot, with a rotten postal service. It is an every day occurrence for mail to be opened and read to see if national secrets are touched upon and if so the letters are suppressed. This will be my last opportunity to send mail without going through Japan, for we are on our homeward trip. Six weeks in Japan and we sail for the good old U. S. Never before was I such an ardent American. No news has reached us of political doings, at home, but we still shout for Uncle Sam.

Peking, China.
March 20, 1920.

F. T. R.

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EDITORIALS

THE INDUSTRIAL NURSE.

The State Board of Health has taken a commendable stand in its notice to nurses employed in large industrial plants for the care of injured employees, calling their attention to what amounts to violation of the Medical Practice Acts in certain instances. These nurses have a great opportunity and are doing a great conservative work, but occasionally and certainly often enough to warrant a warning, they go without

their sphere and treat cases which should be handled only under the actual supervision of the physician in charge of the First Aid Room. Her activities should be confined to carrying out the instructions of the physician and too great latitude in her work should not be given by those physicians who are placed in charge of industrial dispensaries. The prescribing for workmen confined to bed by illness is certainly not within the rightful sphere nor within the professional attainments of an industrial nurse and is capable of more harm than good.

THE MENTAL DEFECT.

Our conception of the chief function of a School for Feeble Minded in its broadest sense is the protection of the community from the results of acts of the mental defect rather than the protection of the unfortunate individual, however desirable this may be.

If this premise be correct, it is difficult to account for some of the rulings of the Penal and Charitable Board or its agents. For example a young girl, obviously a mental defect and so found after examination by a competent psychiatrist is refused admission because her father and mother, dead or unknown for nearly fifteen years, were not residents of this state, though the only home the child now has is with an aunt resident of Rhode Island. While such a ruling may be in strict accordance with the law, it opens up the interesting speculation as to what the ruling will be when the Board has to decide what shall be done with the progeny of such a case, if such a one be not safeguarded against acts which her mentality cannot guard against.

CHRONIC CASES AND IRREGULAR PRACTITIONERS.

Within the last month this community has been treated to a spectacle which, if it were not for the evident sincerity of those supporting it, would have been considered almost charlatanism. We refer to the recent advent of a member of one of the prominent denominations, who claimed unusual powers of healing by the laying on of hands and prayer. His claims to successful therapeusis along these lines seemed to be based largely if not solely upon a reported case of cure of a facial tic some twenty years ago. While in no wise depreciating the value of a contented and hopeful frame of mind, such as is imbued by faith and prayer, nor denying its aid in restoring the sick to health, nevertheless, such demonstrations are surely a potential, if not an actual source of danger to sick people, by reason of the delay and lapse of time, during which those "treated" wait for their expected cure. It is a fact well known to physicians that many chronic ailments undergo periods of betterment without any treatment at all, but with recessions that leave the patient always a little

worse off. For example, an individual suffering, without knowing it, from chronic simple glaucoma will experience "good" and "bad" days. Should such a case follow the advice as given by this clergyman not to expect an immediate cure, but to continue in the faith and to pray diligently, much valuable time would be lost, and vision sacrificed. Again the child with residual paralysis from anterior poliomyelitis would lose golden opportunities to educate his synergic musculature, if time were spent waiting for the cure pronounced by the healer.

To the medical profession, lack of interest in chronic diseases, can be traced in large measure to the appearance of such healers, cults, chiropractors and enthusiastic testimonials of their help by these chronic cases, which the physician, having made a diagnosis, promptly drops, because, forsooth, he has no cure. These cults at least give the patient something—hope, encouragement, faith, which are or should be in every physician's armamentarium. So much can be done in incurable cases by relieving symptoms, and physicians fail in their duty where they coldly disregard the chronic case and pass it on to whatsoever irregular healer may be encountered. The physician owes it as a duty not only to his chronic patient but to the community to endeavor to lighten the burden of the chronic case, even though a complete cure be admittedly impossible.

"—AND YOUR YOUNG MEN SHALL SEE VISIONS, AND YOUR OLD MEN SHALL DREAM DREAMS."—ACTS ii: 17.

In his annual report delivered at the last meeting of the House of Delegates, the Secretary of the Rhode Island Medical Society urged the necessity of stimulating increased attendance at the quarterly meetings of the Society. At the same meeting the personnel of certain standing committees was changed, and younger men who had served on these committees were replaced by older men. These two statements seem to us to have a direct relation to each other and a bearing on the Secretary's words of omen. There may have been good and sufficient reasons for these committee changes, and we are convinced that the men selected are eminently qualified for the positions to which they were elected. They will serve the Society faithfully and well.

As a general rule the policy is not a wise one to serve as a precedent. The way to promote interest in a medical society and stimulate attendance at meetings, as in any other society, church, fraternal order or club, is to keep it young. Encourage the younger men to take part in the hack work of the Society as well as ask them to contribute to the literary programs. The older men have had their full share of carrying the burdens of committee work. They have served faithfully and well for many years, and it is unfair to them as well, to continue to appoint them to these positions when younger hands can easily be found to do the same work. We need the older men for counsel and advice, give the more thankless tasks to the younger men.

LETTER TO THE EDITOR

To the Editor:

THE MARYLAND PLAN AGAIN.

The writer has been anxiously awaiting some word from the Rhode Island Medical Society relative to the noble and patriotic action taken by that body in April, 1917, when they so magnanimously offered to reimburse in part the fellows who placed duty above pecuniary consideration and went forth to do their bit.

Those noble fellows who so boldly marched in the Preparedness Day Parade staked their money in Liberty Bonds and remained behind to Keep the Home Fires Burning certainly did their bit well. They are welcome to all the glory that went with their action.

We admit it is a delicate problem to handle with kid gloves, but is it any more delicate than the "sang froid" manner in which our colleagues of this noble profession lived up to their pledge? I met hundreds of physicians in the service who made real sacrifices and left behind practices of considerable magnitude, but in only a very few instances do I know of men left behind as Keepers of the Faith who calibered up to any appreciable size. I personally know of one case in which a fellow physician, a member of this society, left in charge of an institution, actually allowed himself to be elected physician to that institution and refused to reimburse the doctor in the service as he agreed to do.

In regard to complicated bookkeeping, I grant that the number of new patients accruing to the

clientele of many "stay at homes" must have necessarily meant "Some bookkeeping."

We who entered the service, most reluctantly enter into any controversy in regard to the whole matter. How well we were remembered by our medical representatives at home "We Know."

If this society stands for anything other than the routine action of medical societies in general, it seems to me that they had better expurge from the records the action taken, instead of closing the whole affair with the brief comment, "C'est la guerre."

So far as the writer is concerned the matter is closed. It is now up to the society.

* * *

SOCIETY MEETINGS

RHODE ISLAND MEDICAL SOCIETY.

MEETING OF THE COUNCIL.

A meeting of the Council was held May 20th, 1920, at the Rhode Island Medical Library.

The reading of the minutes were omitted, by unanimous vote, as they had been published in the RHODE ISLAND MEDICAL JOURNAL.

The Treasurer's report was read by Dr. Henry J. Hoye, as appended.

It was moved and seconded, that it be recommended to the House of Delegates that the salary of the Librarian be increased to \$100 per month. It was also recommended that the Janitor's salary be increased to \$36.00 a month.

Adjourned at 4:25 p. m.

J. W. LEECH, M. D., *Secretary.*

Meeting of

HOUSE OF DELEGATES.

The House of Delegates met May 20th, 1920, immediately after the meeting of the Council. Dr. Mowry, First-Vice President presided, and there were present Doctors Day, Metcalf, Risk, Chapin, Welch, Mathews, Cooney, Hoye, Brown, Hindle, Matteson, Spicer, McKenna, Keefe, Briggs, White, Hammond and Leech. After the minutes of the previous meeting had been read by the Secretary, and approved, the election of officers took place with the following results:

President—J. E. Mowry.

First Vice-President—Herbert Terry.

Second Vice-President—George S. Mathews.

Secretary—J. W. Leech.

Treasurer—H. J. Hoye.

Committee of Arrangements—Raymond G. Bugbee, Charles McDonald, Treasurer.

Legislation, State and National—C. V. Chapin, F. N. Brown, D. L. Richardson, President, Secretary.

Library—G. S. Mathews, H. G. Partridge, J. E. Donley.

Publication—R. Hammond, F. T. Rogers, J. W. Keefe, President, Secretary.

Education, State and National—J. H. Ladd, E. A. Stone, Henry Hall, President, Secretary.

Curator—W. J. McCaw.

Necrology—C. H. Leonard, W. R. White, B. F. Tefft.

Auditor, one for two years—J. F. Hawkins.

The Treasurer's report, upon recommendation of the Council, was adopted as presented. On recommendation of the Council, it was voted that the Librarian's salary be increased to \$1200 per year, that the salary of the janitor be increased by \$36.00 per year.

The annual report of the Secretary was then read:

ANNUAL REPORT OF THE SECRETARY, 1919-20.

I beg leave to offer herewith a review of the Society's activities and condition for the past year.

Quarterly meetings have been held, that in September being held at Memorial Hospital, Pawtucket.

The membership roll of the Society is as follows: Active members, 400; Non-resident, 24, Honorary, 9.

Three new members have joined during the year, four have resigned, and the following have died: Dr. George D. Hersey, September 28, 1919; Frank B. Fuller, January 23, 1920; Harry W. Kimball, March 21, 1920; James M. Bodwell, March 25, 1920.

Largely through the initiative of Drs. Roland Hammond and W. A. Risk, the RHODE ISLAND MEDICAL JOURNAL, which was forced to suspend publication after the issue of September, 1918, resumed its regular monthly appearance.

The question of a change in the hour of meetings has been broached from various quarters. In view of the somewhat meagre attendance at the quarterly meeting, it seems desirable that this subject be given serious consideration. The sentiment of the members could best be elicited by a questionnaire in regard to this, and from the

returns this body would be in a position to decide for the majority.

The reports of the chairmen of the Standing Committees were next presented. Dr. B. H. Buxton, of the Committee of Arrangements, reports that the arrangements for the Annual Dinner had been made to be held at the Turks Head Club immediately after the Annual Meeting.

Dr. G. S. Mathews, for the Committee on Library presented the following report:

From June 1, 1919-May 18, 1920. The Library received 407 bound volumes, reprints 127, pamphlets 272. Visitors at Library, 1714. Donations were received from RHODE ISLAND MEDICAL JOURNAL, Rhode Island Ophthalmological Society, Rhode Island State Library, United States Government, American Academy of Ophthalmology and Oto-Laryngology, American College of Surgeons, American Gastro-Enterological Association, American Laryngological, Rhinological and Otological Society, Association American Physicians, Carnegie Endowment for International Peace, College of Physicians, Philadelphia; Connecticut State Medical Society, Massachusetts General Hospital, Parke, Davis & Company, Providence Public Library, Rockefeller Foundation, Royal College of Physicians, London; Section Genito-Urinary Diseases, American Medical Association, State of Pennsylvania, San Diego Chamber of Commerce, San Diego, California; Woman's Hospital, State of New York, Sir Humphrey Rolleston, London, England; Dr. Charles A. Barnard, Centredale, R. I.; Miss Ruth Ely, Providence; Mrs. Harry W. Kimball, Providence. Also from the following Fellows—H. P. Abbott, C. V. Chapin, J. E. Donley, G. W. Gardner, G. S. Mathews, H. Terry, J. A. Webb.

Dr. Hammond, for the Committee of Publication, reported that after several meetings of the committee it was decided to resume publication of the RHODE ISLAND MEDICAL JOURNAL on January 1st, 1920. Dr. W. A. Risk was appointed business manager. Dr. Hammond reported his resignation, as Editor of the JOURNAL and as one of the Publication Committee, to take effect not later than December 31st, 1920. He stated that his action was due to the failure of interest on part of the district societies to furnish material for publication in the JOURNAL. He has experienced the greatest difficulty in getting ori-

ginal articles, as many of the papers presented before the Society are delivered by note and not available for publication.

The report of Committee on Publication and Dr. Hammond's resignation were accepted.

Dr. Phillips, for the Committee of Necrology, reported as follows:

The Committee on Necrology present the following report for the year 1919-20. Dr. George Dallas Hersey, born August 12, 1847, died September 28, 1919. Dr. Frank B. Fuller, born August 28, 1853, died January 23, 1920. Dr. Harry W. Kimball, born January 17, 1868, died March 21, 1920. Dr. James M. Bodwell, born April 13, 1868, died March 25, 1920. Dr. Henry K. Gardner.

Under the head of new business, Dr. F. N. Brown called attention to the lack of attendance on the part of the medical profession at the recent legislative hearing in re the so-called Chiropractice Bill.

Adjourned.

J. W. LEECH, M. D., *Secretary.*

THE LIBRARY TABLE

THE FUTURE OF MEDICINE. By Sir James Mackenzie. London. Oxford Univ. Press. 1919. Pp. 223.

There are books one reads for pleasure, others by reason of duty and yet others because one cannot afford to pass them by. These last are rare books, and among them is Sir James Mackenzie's Future of Medicine. It is in varying degrees critical, autobiographical and prophetic, embodying the matured thoughts of a man now in the evening of his days, who is what Aristotle said every practitioner of medicine should be,—philosopher as well as physician.

The main drift of the author's argument is this:—that disease progresses by a gradual development and so may well be pictured as consisting of four stages, the predisposing, the early, the advanced and the final. Now the evolution of medical knowledge has hitherto been such that, thanks to pathology, ample provision has been made for the study of disease after it has maimed or killed its victims. And it must be recognized that this knowledge is, to all intents and purposes, restricted to the

recognition of disease when it has advanced so far as to have damaged the tissues, a stage which, except in rare instances, does not permit of our attaining one of the chief aims of medicine—cure. The result has been that whereas some men undergo a long and special training to enable them to recognize the appearance of disease after the patient has died, and other men undergo equally careful training to enable them to recognize disease after it has damaged the tissues, few or no attempts are made to train men for the detection of the disease when there is a hope of cure. Thus we have developed a medicine which prides itself on the detection of physical signs. But we have failed to study with sufficient care and insight the earliest warnings of disease—the patient's symptoms. The man who has the opportunity to do this is not the hospital physician or the consultant, but the general practitioner, and until the general practitioner takes his rightful place as an investigator, medicine will continue to suffer from a truncated development and a misdirected aim. Our present difficulties have their roots in the overdevelopment of specialism. As Rousseau long ago remarked, we are prone to lose ourselves in an abyss of infinitesimals, or as the late Professor Osler said in his last Address, the workers lose all sense of proportion in a maze of minutiae. The older physicians studied the individual as a whole, recognizing not only the more dominant signs of illness, but seeking for the more subtle signs which can be revealed only by the trained senses of a skilled examiner, or by his intelligent questioning of the patient based upon an understanding of the significance of the patient's sensations. The ideal dominant to-day, and which has to a great extent superseded this other, depends on the revelation of the signs of disease by some mechanical contrivance devised in the laboratory.

Hence it is that the diversion of research into the laboratory field, and the breaking up of medicine into sections, has rendered the solution of some of its most vital problems an impossibility. Not that Sir James Mackenzie deprecates the use of the laboratory or of mechanical contrivances, but that he sees in

their too exclusive influence a factor militating against a broadly based medicine in the future. In support of his argument the author draws upon his own extensive experience of forty years as a general practitioner. And here he writes an autobiography in parvo of his mental growth as a physician, describing how he investigated pain, how he studied irregular heart action and devised the polygraph and how he observed the actions of different drugs. Finally he lays down the principles of research and sets forth his views on the relations and correlations of laboratory and clinical methods in the medicine of the future. Whether one agrees or not with Sir James Mackenzie—of course, there will be dissent here and there—we cannot rise from the reading of his book without having received entertainment, instruction and stimulus to serious reflexion, not on our limitations only, but on our opportunities as well.

PSYCHO-ANALYSIS AND ITS PLACE IN LIFE. By M. D. Bradby. London. Oxford Univ. Press, 1919. Pp. 259.

A recent book reviewer remarks, "At this date there is no use in arguing about the merits of psycho-analysis. One either has no use for it or swallows whole everything that Freud and his disciples teach." Now it seems to us that we should accept no such dilemma, for the business of sound criticism is to take its stand upon neither of these extreme positions, but to view with an open eye for truth whatever may be presented to it, whether in psycho-analysis or anything else. The trouble with much contemporary writing about psycho-anaylsis is its controversial bias,—the defenders of the cult seem to regard it as almost too sacred for criticism, while its detractors frequently assume a cynical air and will have none of it. This, of course, leads to nothing but ill-feeling and the casue of science suffers accordingly. If psycho-analysis has any message to deliver, by all means let us give it a respectful hearing; we shall not be constrained to swallow whole everything that Freud and his disciples teach.

Of all the books on the subject that have come in our way, this volume of Miss Bradby's

seems to us most suitable for the reader who makes no pretence to technical expertness in the subject. In the first place, she has taken the trouble to learn the real views of the protagonists of psycho-analysis and presents them in understandable English. While her enthusiasm for the subject is obvious, she is no mere slave to Freudian hypotheses; she has vision enough to see and sense enough to say that human beings are moved by motives of sex to be sure, but that other things, the thirst for knowledge, power and beauty are also ruling passions in men's hearts.

The main divisions of the book are as follows: The Unconscious; Primitive Traits in Present-Day Thought; The Place of Psycho-analysis in Life; Light on Biography from Psycho-analysis. Each main division is subdivided and the author writes interestingly of repression, of complexes, of the interpretation of dreams, of symbolism in art and literature, and of the relation of psycho-analysis of evolution, morality and religion. As to the future she is optimistic. Psycho-analysis, she says, like education is a means of enlightenment. It enlightens man's ignorance on the subject of his own hidden and unconscious motives; it reveals to us why we act as we do, individually and socially, and it enables us to conduct our lives henceforth more effectively in accordance with our conscious purposes. When that time arrives we shall have entered upon a new epoch of human history not unlike that on which man embarked when first he became conscious of his ultimate purposes. Let us sincerely hope so. But this word "enlightenment" oppresses us. When we see it and hear it praised there always arise uneasy memories of an Age of Enlightenment in the eighteenth century whose most durable outcome was—the guillotine; and are we not trying now to escape from the hideous consequences of what we were told was another Age of Enlightenment whose most conspicuous contribution to civilization was—poison gas?

HEART PAST AND PRESENT. By Edgar Lea, M.D., M.R.C.P. Lond. New York. Wm. Wood & Co. 1919. Pp. 296.

The present work aims at presenting a case

for the more intensive clinical study of the heart. The attempt is made to elucidate the general principles upon which our knowledge of heart disease has been built up in the past, so that we may find a clue to an advance in the future. In carrying out his purpose the author adopts the historical method and begins at the beginning, describing the development of ideas concerning cardiac anatomy, physiology, pathology, semeiology and treatment from Hippocrates to Stokes. By way of orientation, this historical portion was well worth the doing because, aside from its intrinsic interest, it helps us to apprehend how our predecessors actually worked, why they succeeded, and why, in some respects, they failed.

We have noticed one or two minor errors. The author says that Galen returned to his home at Ephesus to attend the gladiators. It was, of course, to Pergamus, his native city, to which Galen went and where for a time he practiced. Again he says that the idea of correlating and grouping symptoms in relation to disease of particular organs began with Morgagni. This we are aware, is the usual statement but the truth is that long before Morgagni, an eminent physician of Florence, Antonio Benivieni (1448-1502) had done this very thing. He sought out what he called the hidden causes or diseases, and here in his own words, is the precept that guided him, "Oportet igitur medicum non solum morbum cognoscere, sed et locum in quo fit, diligentius perscrutari." Another small slip in proofreading,—Versalius died on the island of Zante, not Zanto.

Until Ludwig made possible the graphic methods of recording the heart movements and blood-pressure, and until the later discoveries of the way of keeping the beating organ alive for indefinite periods by means of perfusion, physiologists and clinicians had small sympathy with one another; but since then they have been mutually helpful and it was the researches of a physiologist, the late W. H. Gaskell, upon the functions of heart muscle which started modern cardiology upon its career. The chemists too, are in line, so that dyspnoea, for example, has been shown to be of various origin; and even when primarily cardiac, it has been proved to be fre-

quently conditioned or complicated by perverted states of the blood. The vasomotor, vagotonic, hormonal, toxic, and infectious storms which sweep over the heart have received much study, so that with increasing knowledge we are becoming more and more convinced that the old formulas will no longer suffice and new ones are imperative.

To meet the present needs of cardiology Dr. Lea proposes to distribute his material under two headings,—the objective and the subjective cardiac abnormal. Under the objective abnormal he places the data derived from the use of X-rays, the polygraph, the string galvanometer, the stethoscope and other instruments of precision. Under the subjective abnormal he groups the patient's sensations and makes the important statement that when these can be shown to be due to the heart they are nothing more or less than cardiac failures itself. It is clear that throughout his discussion the author is shifting the emphasis from the old physical signs to the new functional values, for only when we know the heart's functional abilities can we discuss, with any approach to success, the important questions of prognosis and treatment. The tyranny of murmurs is on the wane and we burn less incense before the old idols, for example, "back-pressure," "hypertrophy," and "fatty degeneration."

Throughout this little volume the author everywhere displays not only erudition, but what is, perhaps, of more importance, excellent judgment. There are no unconsidered statements, no mistaking of words for things and no tricking out of his pages with tinsel borrowed from the work of other men. Hence the book, though small, is filled with thoughtful matter.

J. E. D.

NOTICE

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FISKE FUND PRIZE DISSERTATION. NO. LIX SURGICAL LESSONS OF THE GREAT WAR MOTTO : "PECOWSIC"

By ALLEN G. RICE, M.D., SPRINGFIELD, MASS.

The Trustees of the Fiske Fund, at the annual meeting of the Rhode Island Medical Society, held at Providence, June 3, 1920, announced that they had awarded a premium of two hundred dollars to an essay on "Surgical Lessons of the Great War," bearing the motto:

"PECOWSIC"

The author was found to be ALLEN G. RICE, M.D., of Springfield, Mass.

JOHN M. PETERS, M.D., Providence, R. I.
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Secretary for the Trustees

Early in 1914 the Medical Corps of every European army was serenely confident of its ability to deal most competently with battle casualties, and rightly so. Through actual experience and keen observation in the Russo-Japanese, Boer, and Balkan Wars the effect of missiles on human tissues was well known and understood. The character of war wounds and their treatment had been thoroughly studied and completely mastered. Advances in surgical knowledge and skill had not only made possible the prevention of infection with its consequent delayed healing, disfigurement, and mortality, but had also so perfected operative technique that regions of the body previously deemed inaccessible could be entered with impunity. New devices, compact and portable, made it feasible to operate aseptically in the open field far from established hospitals. The organization and training of the Medical Corps had been brought to a degree of perfection never before equalled. Transportation facilities for the wounded, especially the motor ambulance, were so efficient, rapid, and elastic that it was felt unlimited casualties could be

promptly handled without confusion or congestion.

In the first weeks of the great war the Medical Departments functioned smoothly. The character of the wounds, for the most part due to small, sharp pointed, high velocity bullets, were much as expected. First aid aseptic dressings held off infection surprisingly well; as low as 20 per cent of the wounds became infected. For the most part casualties were rapidly evacuated to the rear, and not until they reached base hospitals were they subjected, except for dire emergencies, to operative procedures. Even those operated at the front were, according to prearranged program, sent comfortably to the rear at the earliest possible moment.

With the definite check of the German advance, however, and the resultant dead-lock from Switzerland to the sea, the character of warfare was vastly changed. Open fighting, swift maneuvering, and frequent change of positions gave way to the fixed routine of immobile trench conflict. The rifle and bayonet gave way to artillery and bombs; the free open life in the field

was bartered away for a cramped and crowded existence in and under the earth. The whole scheme of warfare had to be radically changed to meet unforeseen conditions; every military department had to be reorganized and to a large extent re-equipped with new devices to cope with unsuspected difficulties. Many well tried methods that had withstood the test of previous wars proved to be utterly worthless and had to be ruthlessly scrapped. Probably no department of the army was harder hit than the medical; for the great principle on which its work was primarily based was proved in a few weeks to be not only useless, but to some extent even harmful, when applied to conditions incident to trench warfare. Asepsis fell down.

INFECTED WOUNDS.

In direct contrast to the wounds early in the war, those received in the trenches developed infection almost universally. That such was the rule in spite of painstaking aseptic technique from the moment the soldier's sterile first aid dressing was applied immediately after the wound was inflicted, was such a staggering blow that surgeons were loathe to believe that the principle was at fault. Unjust criticism was showered on the front line dressers who were accused of breaks in technique. But as time went on and infection of wounds continued rife, the unavoidable conclusion was accepted. That the Medical Corps did not become immediately and utterly demoralized when its sheet anchor gave way bespeaks the character and ability of its personnel. True to its traditions the medical profession met the problem and conquered.

The causes of infection were not hard to determine. The preponderance of artillery of large calibre using high explosive shells changed entirely the character of the wounds. Instead of the small, clean cut, punctured rifle bullet wound that not infrequently simply penetrated tissue, there presented for treatment savagely lacerated wounds of large extent generally concealing in their depths jagged pieces of missile and bits of clothing. All the wounds resembled the torn and gaping wounds of exit made by rifle bullets that encountered bone or that were inflicted within the range when the bullet's explosive effect was paramount. Furthermore the destruction of tissue from high explosives ex-

tended far beyond the visible limits of the wound that often had no exit. Muscle and fascia under normal looking skin surrounding the wound was bruised, battered, even dead, robbed of all power of natural resistance. Thus the character of the wounds, large and lacerated, harboring foreign bodies, and surrounded by an area of devitalized tissue, was an invitation to infection that was quickly accepted.

The mode of living imposed by trench conflict but further encouraged infection. Soldiers lived below the surface of the earth under crowded, unsanitary conditions. The trenches themselves were always wet, frequently mere mud holes. For hours at a time the men were drenched and cold which led to universal respiratory infections. The filthy dug-outs swarmed with vermin that preyed on the men and inoculated them with debilitating diseases. Bodily cleanliness and frequent changes of clothing were impossible. Skin and apparel carried into wounds were grossly infected with many varieties of bacteria. Every aspect of the existence endured in the trenches led directly or indirectly to debilitation, sapped vitality, and lowered natural resistance to infection.

Evacuation of casualties from the front line was exceedingly difficult. Not only were the trenches themselves actively bombarded but the entire back areas, especially lines of communication were subjected to frequent, regular, and devastating fire. For the most part, therefore, the wounded had to be moved at night. It was not at all unusual for the wounded to lie for hours, frequently even for days, where they fell, wet and cold, without proper treatment. The first stage of the journey to the rear had to be taken in men-borne stretchers, slowly, over uneven and precarious paths, through winding trenches, time consuming trips that unmercifully jolted and tortured shattered bodies beyond endurance. Pain, cold, hunger, and thirst increased every hour; and surreptitiously infection ripened and spread with each minute's delay. On the other hand once casualties had been brought to areas of comparative safety they were subjected to repeated transfers from hospital to hospital before reaching their final station. The movement was ever toward the home area on the conviction that prompt removal of the wounded to home surroundings was in itself a powerful

psychological stimulus to speedy recovery. The conviction, however, proved to be erroneous. Many wounds, even after prompt and thorough treatment, and showing every indication of rapid aseptic healing, reached base hospitals a few days later in a deplorable state of rife sepsis which could be explained only by the premature evacuation.

Wide, savage wounds; unsanitary and exhausting conditions of living; and delay in treatment, all contributed generously to the development of surgical shock. Often the patient's condition was so critical that surgical intervention in the wound had to be postponed, or at least limited to an unsatisfactory minimum, in order to snatch from impending death by shock a man who later succumbed because of the delay to gross infection. It was ever a vicious circle.

The soil of the lengthy battle front had for centuries been intensively cultivated and generously fertilized until its upper layer teemed with bacteria, more especially anaerobes. This was the soil that smirched the bodies and caked the clothing of the soldiers, whence it was carried into the depths of wounds and lodged in battered tissue bereft of all natural power to resist invasion. There the micro-organisms found ideal homes where they flourished and multiplied.

Finally the huge numbers in the contending armies, far exceeding all past experience, at times flooded available hospitals and overwhelmed local facilities. It was often physically impossible, therefore, to give prompt and thorough treatment to all cases; the greatest good of the greatest number had to be the rule. A single case, even if urgent, had to wait, if it would absorb time in which a dozen others, equally urgent but requiring less time, could be cared for. Time spent on moribund cases was time wasted.

Such were the conditions that had to be accepted; the problem of the Medical Corps was to produce results in spite of them. Infection was the dominating evil; therefore, the prevention of infection became the crying need. Everything was subordinated to that one purpose; the measure of every procedure, of every invention, of every act, was whether or not it prevented infection. If it did all good and well; if not, it was ruthlessly discarded.

General measures that had to do with the

health and comfort of the men were promptly enforced. Shorter hours of duty in the front line trenches, still further ameliorated by frequent reliefs, furnished helpful periods of rest, afforded welcome opportunities for drying and changing clothing, and best of all allowed more regular distribution of warm food. There were times of course when this happy routine was rudely interrupted by enemy activity, but for the most part, especially in the long stretches of so-called quiet sectors, it was preserved. Gradually engineers changed and added to the first hastily dug trenches until they became more roomy and livable. Drainage measures were instituted, and where the soil or location was less favorable pumps or other devices for removing the excess of water were installed. Delousing stations and bathing facilities were set up far in the rear at so-called rest depots where regularly whole regiments at a time were allowed for several days absolute rest from duty and forced to clean up. First aid and regimental dressing stations were pushed close to the front line trenches, and field and evacuation hospitals were brought farther forward for the purpose of rendering earlier surgical attention. The kind of treatment afforded the wounded in the earliest stages is reflected in the whole course of their subsequent illness; and no amount of surgical skill can undo an error previously committed. Transportation of the wounded was speeded up and so well correlated among separate units that not infrequently casualties demanding urgent operation reached the proper hospital within a few hours. Motor ambulances alone made this possible. In fact, the motor ambulance is the very foundation on which surgery at the front is based. On the other hand premature evacuation of patients already operated was retarded. Unless the wounded could be safely held at the place of operation for a reasonable length of time, it was best to evacuate them unoperated. The delay occasioned by the postponement of definitive surgery was far less injurious than the damage done to a healing wound by the exigencies of a trying journey. Every effort was made, therefore, through early classification of cases to make the first transfer the final one, or at least to hold operated cases at the place of operation for about ten days. Special shock teams and rooms were established at designated points where special

treatment could be promptly and vigorously carried out. The urgent but time consuming cases that had to wait when the rush was greatest came to be better handled through the creation of observation wards. There doubtful and postponed cases were segregated. If mixed with other wounded men these cases were liable to be overlooked. Each man was tagged with the name of a surgeon whose duty it was to visit all his observation cases at stated intervals to the end that he not only might not forget them, but also that he might be regularly made cognizant of their condition. In this manner cases were often sandwiched in between operations and lives saved that would otherwise have been lost. All these measures aimed at conserving human vitality and enhancing, or at least preserving, natural resistance against disease, to the end that the individual's own defenses against infection should be brought to the point of maximum strength.

ASEPSIS AND ANTISEPSIS.

With all indirect measures in full swing there remained to be prosecuted the direct attack against infection of wounds. With asepsis a failure, surgical thought went back to Listerian days and keen search was instituted for antisepsics. Every day produced a new compound, mixture, or solution that enjoyed fleeting fame by its enthusiastic sponsor until supplanted by to-morrow's. Their legion merely attested, not their futility, but their universal shortcomings. Many of them were of considerable value, and some, like the "Bipp" preparation of the English, certainly at least in the hands of enthusiastic followers, gave happy results. But one and all had a common failing: in spite of proved bactericidal power ultimate healing of wounds was strung over a considerable period of time. Gradually, however, from out the chaos there arose accepted principles that grouped themselves about one fundamental idea, the closure of wounds. So much of asepsis survives. The axiom that a wound closed by suture or other means healed more promptly and with less danger of infection was not disputed; the problem was to close these war wounds with impunity.

DEBRIDEMENT.

Through painstaking bacteriological and path-

ological study of wounds it was learned that even in the face of the wretchedly vile and dirty conditions under which wounds were inflicted, the tissues were for the first eight or ten hours not infected but merely contaminated. Bacteria were present but had not established a favorable habitat for themselves. If, therefore, the wound could be treated within that period and if all the contamination could be removed, the wound could be closed and aseptic healing expected. Practice proved the theory correct. Casualties received within the first eight to ten hours had their wounds completely excised, in one mass if possible, under rigid aseptic technique,—the debridement of the French. The excision had to be bold, ruthless, extensive, limited only by organs not to be cut. Attrition, cellular compromise, and devitalized tissue extend always one and often even two centimeters outside the actual track of the wound. Much has to be sacrificed; large, but not essential vessels tied off; fascia excised; and muscles cut even transversely. Ideal debridement is the removal of the intricate, ramifying walls of the wound in one mass in such a manner that the knife passes through only sound and uncontaminated tissue. It becomes imperative, therefore, to recognize tissue showing but the slightest and earliest evidence of impending destruction, a condition that has been aptly called local tissue stupor. Such tissue is damaged, not dead but prone to die, and almost certain to succumb to infection. It is characterized by dryness, lifelessness, anemia, and in the case of muscles by insensitiveness or sluggishness of response to stimuli. All such tissue must be excised. It is far better to cut away too much and be safe than to preserve doubtful tissue and watch apprehension turn to certainty of infection. Furthermore no sinuous tracks leading to potential cavities can be passed by; no shreds of hanging tissue nor loose fragments of bone can be left behind; and no bits of shell or clothing can be overlooked in the depths of the wound. Covering the entire interior of the wound with a solution of brilliant green which stains all tissues a uniform shade makes a helpful guide. Excision completed, clean gloves are donned and a new set of instruments used. Not a small factor determining success is absolute hemostasis; for a small blood clot may allow the propagation of a few bacteria inadvertently left behind that

fresh normal tissue would destroy. At this point the repair of important structures that have been damaged must be accomplished. Severed tendons should be sutured by a nice approximation of the cut ends. Divided nerve trunks are to be carefully sought for and united. Immediate suture of blood vessels is rarely indicated because when main trunks are injured shock and hemorrhage intervene to prohibit any such extended surgical procedure. Even if sutured the attempt is very liable to be followed by aneurysm. As a matter of fact large arteries are rarely wounded. They are, however, often contused. When there is considerable contusion or doubt as to the permanent continuity of the vessel wall it is best to ligate in two places rather than incur the risk of subsequent aneurysm. Deep muscles are then loosely approximated with as few sutures of cat-gut as possible and the skin closed without drainage. Wounds thus treated within eight to ten hours of infliction will heal by first intention in about 90 per cent. of the cases in soft parts, and in about 50 per cent. in compound fractures.

The post-operative care is, however, of vital importance. Every wound must be splinted and so splinted as not only to insure absolute rest to the part involved, but also to preserve immobility until healing is obtained. In fact rest is so essential a factor that early evacuation to the rear or to home hospitals proved in itself a potent cause of failure to obtain first intention. It therefore becomes a rigid rule that if the case cannot be safely held at the place of operation for ten days, it is far safer not to attempt immediate suture of the wound but to be content with debridement only.

DELAYED SUTURE.

A large percentage of the wounded, however, could not of necessity be treated within the eight to ten-hour period essential for primary suture. Also, many cases treated within that period had to be immediately evacuated because of the exigencies of the military situation. Corollaries of the eight to ten-hour dictum are that the chance of rendering a wound aseptic by debridement after an interval of twenty-four hours is small; after forty-eight hours, nil. Up to twenty-four hours, however, the chance is to be taken and is often surprisingly successful. These

wounds are to be treated by thorough debridement and absolute hemostasis. Sutures for closing the wound are then placed but not tied and a large aseptic dressing applied. At the end of twenty-four hours and again at the end of forty-eight hours cultures of the wound are made, and if the first shows no streptococci and the second a level or falling bacterial count, the sutures can be safely tied with expected primary healing in about 60 per cent. of all cases. This is the so-called primary delayed suture of Duval. It is an equally useful procedure, in fact the one indicated, in those cases which, though otherwise favorable for primary suture, have to be evacuated prematurely.

So well established are the principles, so well defined are the indications, so precisely developed is the technique, and so brilliant are the results, that primary or delayed primary suture of every wound must be acknowledged the treatment par excellence. No other method even approaches it in rapidity of healing, absence of infection, and freedom from deformity or impaired function. It is a step forward in aseptic technique unequalled since the birth of asepsis. To refuse it to a patient in civil life when under unfavorable war conditions it proved so successful must now be regarded just as surgically criminal as would be the employment to-day of the crude and obviously septic procedures of our fore-fathers. While it is highly probable that the future will bring forth a perhaps equally notable advance, it will do so, not by a miraculous jump from some rear position, but only through a cautious progress from this well supported forward station.

CARREL-DAKIN TREATMENT.

When all is said and done, however, it is in the violently infected wounds which for the time being seemed hopeless that the greatest contribution to surgery is found. Dr. Carrel and Dr. Dakin, after patient intensive study, developed and perfected the technique that bears their joint names. To Dakin belongs the credit of discovering the most ideal antiseptic known: painless, actively germicidal, and harmless to normal tissue. To Carrel goes the credit of developing the technique that allows the antiseptic to produce its maximum effect.

Very briefly Dakin's antiseptic is a solution of

sodium hypochlorite (NaOCl) of a strength between 0.45 per cent. and 0.5 per cent. and faintly alkaline to alcoholic phenolphthalein but not to powdered. Unless made to conform exactly to these limitations it not only loses its virtues but becomes irritating, even harmful. The solution is very unstable, losing its strength rapidly in the light and slowly even under the best conditions in time. It must therefore be freshly made as needed and kept in closely stoppered, deeply colored, brown bottles protected from the light. The early and tedious methods of manufacture have been replaced by the quick and efficient method of passing chlorine gas in metered quantity through a measured solution of sodium carbonate for a calculated length of time. The necessary apparatus has been so perfected and simplified that the manufacture of perfect Dakin's solution is now within the reach of all¹. It is absolutely essential that every liter made be titrated with decinormal sodium thiosulphate and tested with both powdered and alcoholic phenolphthalein in order to insure that the solution has the proper strength and alkalinity. Both tests must always be made, for the correctness of strength does not at all insure the correctness of alkalinity. Also any Dakin's solution kept for twenty-four hours or longer must be again tested before using. Its instability is annoying and precludes any short cut to success. A variation of even 0.05 per cent. in strength spells either disaster or ineffectiveness according as the variation is high or low.

The action of Dakin's solution depends primarily on the liberation of chlorine. Introduced into the tissues this liberation is completed in from ten to fifteen minutes. Its action would, therefore, be almost ineffectually fleeting were it not for the redeeming fact that by the action of Dakin's solution on tissue secretions chloramine bodies are formed whose antiseptic properties are considerable and whose action is prolonged. In addition to its antiseptic power Dakin's solution possesses to a high degree the ability to dissolve pus, slough, and necrotic tissue in a most surprising rapidity of manner. This in itself is a most valuable attribute. Most of the

ordinary antiseptics are prevented from essential, intimate contact with bacteria by the protective masses of blood and leucocytes which surround them and on which most antiseptics have no destructive action. Dakin's solution is so prone also, not to dissolve blood clot, but by its solvent action on fibrin to dissolve the fine fibers that hold the clot in place and thus detach it in mass, that this contingency must be safeguarded by obtaining primary and complete hemostasis in all wounds to be Dakinized. Last, but not least, its prolonged action on normal skin is so irritating that the integument everywhere adjacent to the wound must be vigilantly protected by some sort of bland grease.

Because, therefore, of its quite unique properties Dakin's solution becomes effective only when used in such manner as makes use of those properties. The technique evolved by Carrel is the only technique that correctly utilizes these properties in the way that brings about the desired end, sterilization of the wound. Four equally important and interdependent steps effect wound sterilization. The first may be named mechanical cleansing. This calls for expert and radical surgery, good surgery in every sense of the word, and most of all for sound judgment. Depending on the lapse of time since the injury was inflicted, wounds are found to fall into two main types: first a phlegmonous type characterized by violent and unchecked infection with marked constitutional symptoms; and secondly, a frankly suppurating type, the sequel of the first, in which infection has become localized and general symptoms mild or absent. Between the two lie borderline cases demanding great nicety of judgment. In the phlegmonous type too much surgery is dangerous. All thought of complete excision of the wound must be sternly repressed in favor of superficial cleansing, removal of gross and easily found foreign bodies, and multiple incisions to secure free and ample drainage of every recess of the wound, measures just sufficient to render its whole aspect suitable for later management. More radical interference is certain to open up new channels for infection and invite its spread in spite of future treatment. In the frankly suppurative type, however, bold surgery is far less dangerous, in fact, generally indicated, though often best postponed until some of the infection

¹The apparatus designed and manufactured by Wallace and Tiernan Co., Inc., New York City is eminently satisfactory. Each outfit is accompanied by a small booklet giving full directions for setting up the apparatus, making Dakin's solution, and testing the product.

at least has been conquered. If operation is elected, the radical debridement already emphasized in the primary suture of wounds is to be practiced, but with great discretion. Nature's own defensive wall must not be breeched but jealously conserved. Obviously dead tissue, hanging shreds, loose fragments of bone, all bits of clothing and shell as predetermined by X-ray examination must be removed, and in addition pockets, sinuses, and branching cavities must be freely laid open even at some risk of extending infection; for the success of the next step leans heavily on the creation at this time of a wide open wound, of even contour, roughly cup or saucer shaped, with its greatest dimension at its exit in the skin.

The *second* step is the chemical cleansing of the prepared wound. This is the unique step in the Carrel-Dakin technique, though by no means the most important. So interdependent are the four necessary steps that the second, however nicely, persistently, and devotedly it may be pursued, fails always when its predecessor has been improperly executed. The agent employed for chemical cleansing is of course Dakin's solution. Other agents used in exactly the same way as controls have universally failed to sterilize wounds with the rapidity, thoroughness, and positiveness that Dakin's solution effects. Nor will Dakin's solution applied to the wound by any method except Carrel's accomplish at all brilliant results. The antiseptic must flood the wound completely. Ubiquitous dispersion of the agent is assured by instilling it into the wounds through rubber tubes left open at the ends or with the ends closed and perforated at the sides. So exact and scientific is every point in the technique that the slightest deviation from the blazed path invites failure. The calibre of the tubing; its firmness and thickness of wall; the number and size of the lateral perforations, have all been worked out according to physical laws that must be obeyed². Enough Carrel tubes

²Instillation tubes are of rubber with an inner diameter of 4 mm., and a thickness of wall of 1 mm. Single opening tubes are 30 cm. long, ends left open, but a small side opening made near the wound end to act as a safety valve in case the end opening becomes plugged. Side perforated tubes are of four sizes, 5, 10, 15, and 20, respectively. The first two are 30 cm. long, the remaining, 40 cm. The ends are tied off with linen thread. Beginning at the closed end the sides are perforated every cm. for the number of cm. indicated by the number of the tube. The perforations are 0.5 mm. in

are laid in the depths of the wound and along its sides to insure the delivery of solution to every area, held in position by lightly packed sterile gauze, and brought out of the wound at its highest anterior angle. The tubes must be long enough to project well beyond the bountiful dressing of gauze that covers the wound as well as the retaining bandage or swathe. The Carrel tubes are then joined through branching tubes of glass to one large rubber tube with a clamp that leads to a dark brown glass reservoir suspended above the patient. The reservoir holds the Dakin's solution, which by releasing the clamp is allowed to flow by gravity through the tubes into the wound whence it seeps out into the dressing. Instead of connecting the tubes to a reservoir each Carrel tube may be left lying independently outside the dressing and Dakin's solution instilled separately into each from a glass syringe. At first the wounds were subjected to continuous instillation by so loosening the clamp that a definite amount of solution was allowed to flow drop by drop in a given time. This was found to be exceedingly difficult to keep regulated and had the disfavor of keeping the patient constantly wet. Experience proved that after an instillation of a definite amount it took at least two hours for bacteria to recover from the shock of the antiseptic, so that continuous instillation has given way to intermittent, once every two hours day and night. It might appear on first thought that nocturnal instillations every two hours would so seriously interrupt the patient's rest that their general condition would suffer. This is really far from being the case. After the first night or two patients seldom are awakened by the instillations; in fact it is not at all unusual for them to doubt the most conscientious attendant's word that the instillations were faithfully given while they themselves slept. The amount to be used at each instillation cannot be expressed in definite measure, for conditions vary. A large wound requires more than a small one; the more tubes in a wound the more fluid is necessary, etc. The

diameter and are made with a special punch. Covered tubes are simply side perforated tubes covered with Turkish toweling which covers the tube 5 cm. beyond the last side opening. Special tubes are No. 3, perforated every half cm. for 3 cm.; loop tubes, 70 cm. long, perforated in the mid portion; and empyema tubes, 50 cm. long, perforated every cm. for 10 cm., and stiffened with No. 22 gauge silver wire.

purpose is just to fill the wound; too much is mere waste and wets the patient; too little leaves some part of the wound untouched which can be easily recognized and corrected at subsequent dressings.

Because of its irritating propensity to normal skin, the integument everywhere adjacent to the wound which is liable to be bathed by the solution must be protected. The best protection is gauze impregnated with vaseline mixture³. Just before the dressing is applied layers of this vaseline gauze are laid on the skin about the wound and ironed out smoothly. Occasionally this fails to protect and a firmer substance must be used such as zinc oxide ointment generously smeared around the wound. Rarely there is encountered in the blue-eyed, freckled type of individual a skin that nothing will protect and the only recourse is to use Dakin's on alternate days or not at all.

Aside from the regular day and night instillations every two hours these wounds need attention only once a day when they should be completely redressed. To insure rapid sterilization the dressings must be done under rigid asepsis. With a little practice the entire procedure can be carried out easily with instrumental technique; the bare hands touch nothing and need not, therefore, be rendered surgically clean. An assistant, or even the patient himself, removes the entire dressing tubes and all. It is surprising to find how painless are all manipulations about Dakinized wounds. There is no sticking of gauze to be forcibly and painfully freed carrying with it strips of budding epithelium and leaving behind a raw, bleeding, tender surface. If the technique is being properly carried out the gauze slips away leaving bright pink, healthy granulations covered with viscid, shiny fluid, colorless, odorless, and at times stringy. Isolated collections of pus or areas of slough denote regions that Dakin's solution failed to reach, indicating that the positions of the tubes must be altered or more tubes inserted to correct the defect. The wide open wound is first irrigated thoroughly but gently with Dakin's and the

excess allowed to run off. The granulations and especially the surrounding skin are gently scrubbed with a solution of neutral soap or gasoline until every caked bit of blood or flake of crusted serum is removed. It is beneath such detritus that bacteria flourish and prevent sterilization. The wound is then again gently washed with Dakin's solution and redressed exactly as at the initial dressing when it is ready for another twenty-four hours. With a little experience and competent team-work these dressings can be done with great rapidity and pleasure to patient and surgeon alike. The absence of pus and lack of odor from these wounds are as remarkable as the painlessness is surprising; and the healthy appearance of wounds and patients is surpassed only by the rapidity of healing. Hard, bright red granulations grow with astounding speed quickly filling the wound. Very early the epithelial edge begins to proliferate. The thin blue line of new cells widens very slowly at first, but once the wound is leveled with granulations the rate of growth is greatly accelerated. This rate of cicatization has been closely studied under all forms of treatment and no other method approaches the Carrel-Dakin in rapidity. A French physicist by means of a most ingenious planimeter is able to measure in square centimeters the exact area of any wound however irregular in outline. If the daily diminishing areas of a healing wound be recorded on a suitable chart a curve is plotted which approaches zero. By prolonging this curve he could predict the day on which cicatization would be completed with most uncanny accuracy. Interruption of treatment or secondary infection, of course, disturbs the curve but curiously, if promptly corrected, does not affect the prediction; because renewed cicatization after such interruption is strangely accelerated.

The *third* step is the bacterial count. As soon as the wound looks clean smears are made daily with a standard platinum loop full from the least healthy appearing portions of the wound and the number of bacteria per field of the microscope carefully counted. In obtaining the smear blood must be carefully avoided for the erythrocytes rapidly clump and hide bacteria. If fifty or more bacteria are counted in the first field observed further examination is not made and the bacterial count is chartered as infinity. As

³A perfectly tight tin box is filled with pieces of gauze 9 by 17 cm. The box and its contents are sterilized by steam. While still hot the box and gauze are filled with a melted solution: vaseline 92%, hard paraffine 6%, resin 2%. When cooled it is easy to pick up as needed single thicknesses of gauze which are found to be thoroughly impregnated with the vaseline mixture.

the count decreases at least ten fields, better fifty, are counted and the average computed. Almost without exception the count rapidly diminishes to one or two per field, and thereafter more slowly. When the count shows one bacterium in five fields on two successive days the wound may be safely regarded as surgically clean, except in the case of compound fractures where the count of one in five fields must be obtained for five successive days. It has been vigorously contended, and still is, that the attainment of this minimum count does not certify to the surgical cleanliness of the wound unless it is also proved by cultural methods that none of those rare bacteria are streptococci. As a matter of fact it has been so conclusively proved by cultural methods that wounds having only one bacterium in five microscopic fields never harbor streptococci, that the bacterial count alone is sufficient to prove their absence; and the court of last resort, clinical experience, has ably demonstrated that wounds deemed sterile by bacterial count as often prove to be so as those so determined by cultural methods. Moreover, cultural methods contain a deceptive source of unavoidable error. The bacteria held in the loop for culture may be either accidental and transitory contaminants, or may be permanent inhabitants unacclimated and unable to grow in the presence of the defensive juices of the wound, but when transferred to the more suitable environment of artificial culture media regain their vitality. In either event the conclusions to be drawn from a positive culture are erroneous as regards the real condition of the wound. For all practical purposes, therefore, the much more simple and rapid determination of wound sterility by bacterial count alone is a perfectly safe criterion. If the bacterial count be regularly recorded on a suitable chart a curve is drawn which ever approaches zero. The first count is invariably infinity; but after an initial rise about the second or third day the count steadily declines with such rapidity that ordinary wounds of soft parts are surgically sterile in from five to eight days. More extensive wounds require a longer time; severely traumatized wounds, two weeks; and compound fractures freed from sequestra about four weeks. Let the treatment be interrupted and the count instantly rises. A soldier patient, a mathematician, while undergo-

ing Carrel-Dakin treatment ingeniously worked out a formula by which from the chart he could calculate the day on which the wound would be sterile. While perhaps this formula may be of only academic interest, like the planimeter measure of cicatrization, the fact remains that in many instances the calculated date of sterility exactly coincided with the actual date, and thereby, like the planimeter, gave proof of the scientific precision of the Carrel-Dakin technique.

The *fourth* and last step is the closure of the sterilized wound, the final goal, the consummation of the technique, and the measure of its worth. Because of the delay involved this late closure is designated secondary suture. The time when closure may be safely attempted is when the wound is pronounced surgically clean. Earlier attempt spells disaster, further delay merely postpones ultimate healing. Generally speaking the wound is healed eight days after secondary suture. In all small wounds, and in certain moderately large ones to be determined only by experience, it is obviously debatable whether time will be saved by secondary suture. These wounds are likely to heal by themselves in the eight days required for closure by suture. Whenever, therefore, the time necessary for spontaneous healing and for healing by secondary suture nearly coincide, it is wise not to subject the patient to the risk of further operative measures, but to allow the wound to heal naturally. The technique of secondary suture is very simple. Under general anaesthesia and strict asepsis the new epithelial margin of skin and the adjacent granulations are excised as a long strip and the fresh wound edges brought together with interrupted sutures. Undue tension on the stitches must be avoided. If the wound fails to coapt easily, undermining or other plastic procedure must be invoked. A large aseptic covering and a comfortable splint complete the dressing which need not be disturbed for a week. There will then be found just the fine linear scar that invariably follows suture of an incised wound. It is, for that matter, a happy sequela of all Dakinized wounds that, however healed, the resultant scar, irrespective of the size of the original wound, is never dense and thick but always thin and pliable. And in whatever manner ultimate healing is obtained, whether by

primary suture, delayed primary, or secondary closure, the resultant scar must be treated with the greatest respect. Dire experience has taught that deeply imbedded in the scar isolated bacteria survive latently for weeks and months, harmless if left alone. But let the cicatrix be subjected to undue manipulation or insulted by premature operation the sleeping germs awaken into violent activity that not only undoes much of the local repair but even threatens life itself.

There can be no question about the matter: to Carrel and Dakin belong the credit for the greatest surgical discovery the war has produced. The idea, the possibility of sterilizing infected wounds by chemical means, is of course the original Listerian one and cannot, therefore, be truthfully called new, but the idea had been practically abandoned for years in favor of asepsis, so that Carrel and Dakin must be credited with at least resurrecting the principle and re-applying it. In so far as the means, and especially the agent, employed are concerned their work is indisputably new, and whatever changes may be made in the technique through future experience, to them will the world be forever indebted for their conquest of infection. That the Carrel-Dakin technique actually accomplishes wound sterilization has been conclusively proved over and over again until it has earned its place in surgery for all time.

Because of such inherent disadvantages of Dakin's solution as instability, arduousness of manufacture, and difficulty of use, Dakin was spurred to further effort and later brought out two more antiseptics which he named chloramin T and dichloramin T. While more stable than sodium hypochlorite they are nevertheless decomposed by light and time and have therefore to be protected. Like the original Dakin's solution these are both chlorine compounds which accomplish maximum destruction of bacteria with minimum detriment to tissue; unlike the original their application is simple, does not demand special apparatus, and their manufacture is easy. While both can be used without irritation in much greater strength and perhaps, therefore, possess greater antiseptic power, neither possesses the inestimable property of dissolving pus, blood, and necrotic tissue. Chloramin T is soluble in water, more stable and prolonged in action than Dakin's solution, and can be used in strengths up to 2%. Non-

toxic and non-irritating it may be applied in solution or as impregnated gauze, and is well suited for use in wounds already cleaned with Dakin's and free from slough. Mechanically combined with sodium stearate it forms a whipped cream like substance or paste, Dau-fresne's paste, which can be freely spread over wounds. In this form its action is said to be prolonged, but its worth is not yet satisfactorily proven.

Dichloramin T is completely soluble only in oily media, best in the specially prepared solvent, chlorcosane. It contains twice as much chlorine as chloramin T and has a much stronger germicidal action. It can be safely used up to a strength of 20%, but for general surgical work a 5% or 8% solution is sufficient. As a rule oily solutions are hindered by the oil from obtaining intimate contact with infected matter and hence possess little antiseptic power. Dichloramin T, however, yields moderate amounts of antiseptic to watery media such as wound secretions and so exerts efficient germicidal action. The oil acts so to speak as a reservoir of available antiseptic which can be constantly drawn upon by the wound secretions. As the store is not exhausted for from eighteen to twenty-four hours the wounds need to be dressed but once a day. It is especially indicated in wounds that do not require irrigation or that have been freed of all necrotic material by Dakin's solution. The oil may be sprayed from an atomizer or be injected from a glass syringe. Contaminated wounds have been treated from the start with dichloramin T with most gratifying success. After careful debridement and absolute hemostasis the fresh surface is well covered with the oil and the wound immediately sutured without drainage. Older infected wounds, prepared as for Dakin's solution, have also been perfectly sterilized by means of dichloramin T. The wound surfaces are first covered with coarse mesh gauze which has been thoroughly impregnated with paraffine. Then a generous amount of oil is poured into the wound which is kept open by a light packing of gauze. Since there is no excess solution used and no regular addition of fresh solution is instilled as has to be the case in the Carrel-Dakin technique, the amount of dressing material may be greatly diminished, a by no means negligible economy. No further attention is

necessary or indicated for twenty-four hours when under rigid, aseptic, instrumental technique all gauze is removed, the skin around the wound cleaned with soap and water followed by benzene, and a new dressing applied. There is no grievous sticking of gauze which slips away painlessly without leaving a raw bleeding surface. Because of its ease of manufacture and application dichloramin T is an especially appealing antiseptic; but while its germicidal power and general efficacy are great it is not in the long run as rapid in action or as effective as the original sodium hypochlorite which with its additional unique solvent action on pus and necrotic tissue still retains its place as the most perfect antiseptic yet known.

TETANUS.

While the almost universal infection of wounds with ordinary pyogenic organisms caused anxiety enough, two specific infections came to be regarded with special dread, tetanus and gas gangrene. These virulent anaerobic bacteria grew luxuriantly in the highly fertilized soil of France whence they obtained ready access to wounds. Prewar knowledge of tetanus was already considerable and experience gained in the war did little to shake that knowledge or add to it. The tried and proven prophylactic serum fully equalled expectations in as much as its compulsory injection into every wounded man almost completely stamped out the disease; but incidentally something new was learned regarding its nature, action, and dosage. That the severity of tetanic infection was, as heretofore believed, proportionate to shortness of the incubation period did not always hold true; in fact was not infrequently to the contrary. Some of the worst cases encountered developed only after a lapse of many days. A first prophylactic dose of 500 units proved sufficient for ordinary wounds; large or very dirty wounds require from 1000 to 1500 units. A primary dose of 500 units was so rarely followed by anaphylactic shock incident to subsequent injections that all danger on that score was eliminated. Traces of the first prophylactic dose are retained in the body for twenty-one days at the most but in quantity to insure immunity for only about ten days; a second dose is retained only seven or eight days; and a third even less with a proportionately shorter

duration of immunity. In other words repeated doses reduce the patient's ability to hold anti-toxin. While it was found that tetanic patients have in their blood positive amounts of natural antitoxin, the amount is too small to render lasting immunity. Postponed surgery on tetanus wounds that have been healed for many months is, therefore, by no means devoid of danger; for not only does the bacillus of tetanus linger latent in the scar for long periods ready to activate when disturbed, but whatever natural immunity has been acquired is impotent, and a prophylactic dose given just previous to operation is of fleeting efficacy. Of all the possible routes for the injection of antitetanic serum the intrathecal is the most effective and most rapidly saturates the body, but the subcutaneous or intramuscular route is preferable for prophylaxis because being more slowly absorbed its action is more prolonged.

From the fore-going facts a prescribed prophylactic course of treatment was instituted that proved so effective that it can be positively relied on to prevent tetanus. Expect tetanus in all wounds was the premise. At the earliest possible moment every wounded man received 500 units subcutaneously or intramuscularly, and every seven days thereafter a similar dose until four had been given. If at a later period an operation became imperative another dose of 500 units was administered forty-eight hours before operation.

As it is impossible to tell from inspection of the wound whether tetanic infection is present or not, early signs and symptoms of the disease must be promptly recognized. The classic signs of tetanus refer to a phase of the disease in which treatment has lost much of its power and value. Local rigidity, spasticity, or jerking of muscles adjacent to the wound, especially at night, are premonitory signs that precede the classic symptoms by hours, days, and occasionally even weeks. As the toxin of tetanus may become generally distributed by the blood stream as well as by continuity of nerve tissue, similar local manifestations may appear at any time in muscles far distant from the wound. All evidence of the disease may be entirely confined to just such localized manifestations which after persisting for months gradually disappear; but only too often the local signs are followed after varying intervals by all the dis-

tressing evidences of generalized tetanus. In the light of present knowledge, therefore, there is no excuse in the presence of such local signs for delaying either the diagnosis of tetanus or the prompt institution of vigorous treatment. Time is the most effective factor in success. In the way of treatment the wound of course should be laid wide open. Carrel-Dakin treatment probably offers the best method of local attack, but the value of any local measure is slight. As a matter of fact the war has done little except to emphasize the futility of all non-specific remedies and the necessity of speedy massive doses of the specific antitoxin repeated without stint as long as symptoms persist.

GAS GANGRENE.

In respect to the other specific infection, gas gangrene, the story is profoundly different. Not only was prewar knowledge of the disease comparatively meager, but its incidence and morbidity were woefully unsuspected. Its prompt appearance on the battle fields of France, however, stimulated investigations that even if they have not beyond dispute produced a specific prophylactic and curative agent, have added greatly to knowledge of the disease and given promise of the early discovery of a potent remedy. In the process not a few preconceived notions have been refuted. The cause of the disease, for example, has been found to be due not solely to the *bacillus Welchii*, but to a variety of other anaerobic, gas producing organisms; *bacillus sporogenes*, *vibron septique*, *bacillus edematiens*, and less frequently *bacillus histolyticus* and *bacillus Hibler*. Rarely from one wound were pure cultures of any one organism obtained; very often two or more types were found living symbiotically with aerobes which augmented their effect. The *bacillus Welchii* was, however, isolated from about 75% of all cases. The *bacillus sporogenes* alone is non-toxic but shows a determined tendency to grow symbiotically with any of the others whose activity it then enhances. The causative agent necessarily enters the wound as spores which mature only under anaerobic conditions. It was not at all surprising, therefore, to find that about 70% of all wounds were contaminated with anaerobic bacteria which, however, because of unsuitable environment were far less often able to infect. Fresh, normal blood

contains sufficient oxygen to inhibit the growth of these anaerobes. Therefore tourniquets, exsanguinated tissue, devitalized and necrotic structures are all so conducive to anaerobic growth that they must be avoided or removed. Muscle tissue proves to be absolutely essential for the production of gas infection; for no wound without muscle involvement was ever so infected. Once firmly implanted the bacteria grow with tremendous rapidity and manufacture an exotoxin that has two special predilections: one for muscle structure which it rapidly destroys with the production of an equally poisonous tissue toxin; and the other for blood which it as rapidly hemolyzes. This bacterial toxin has been isolated and from it has been made in a manner similar to the manufacture of diphtheria antitoxin a specific serum for which great hopes are entertained. The production of gas is rapid and voluminous. It has been conclusively proved, however, that the gas itself is not toxic but that by its pressure it acts in a very destructive mechanical fashion. An invariable accompaniment of gas infection is the more or less rapid development of varying degrees of acidosis.

Pathologically the process extends rapidly along muscle bundles always in a longitudinal direction except occasionally when it invades the muscle coat of arteries when it may follow the transverse course of the vessel across the muscle. For that reason it not infrequently happens that only one muscle of a group or even occasionally but part of one muscle is involved. The rapid production of gas exerts a pressure that first effectually strangulates muscle bundles and deprives them of blood oxygen and then later bursts the enclosing sarcolemma allowing herniae of muscle fibers. The gas detected in the subcutaneous tissue is not formed there but has escaped from ruptured muscles. Strangulated tissue rapidly becomes gangrenous. The whole process extends with the most startling haste. Gas has been detected in a wound within the first five hours, followed by complete gangrene of the limb and death of the patient within fifteen hours.

It is quite common to find the disease divided clinically into different types. One frequently used classification is gas infection or gas cellulitis,—a local somewhat benign manifestation,—and gas gangrene which embraces the

severe, explosive, fatal types with marked constitutional symptoms. Attempted classifications on an etiological basis are especially to be condemned, not only because the infection is invariably mixed, but also because in the present state of knowledge the part played by each kind of organism is not by any means certain. In this respect, however, it is recognized that the *bacillus edematiens*, when once firmly implanted, rapidly kills off other varieties and becomes the dominating organism. Such cases are as a rule quickly fatal. Another and finer classification subdivides into malignant gaseous edema, classic gaseous gangrene, toxic gaseous gangrene, and mixed. All such attempts at nomenclature are not only hair splitting and confusing, but unnecessarily futile. It is perfectly obvious that these are not different types of the disease but merely different stages in its development to be recognized as such. There are mild, severe, and perhaps even abortive cases just as there are of other diseases, depending on such many and complex factors as the virulence of infection, natural resistance of the patient, promptness and efficacy of treatment, etc. This conception of the disease is all the more to be accepted because of the perfectly obvious and natural division of the process into four distinct stages defined and limited by bacteriological and pathological findings. These stages may follow each other with startling haste at irregular intervals, or slowly and orderly without in the least altering the fundamental conception. The first is named the dormant stage. The wound is contaminated with the organism which has, however, not gained a sufficient foot-hold to produce in the wound the classical diagnostic appearance. Nevertheless, this is the period in which it is imperative to make a diagnosis; for when the old classical signs appear infection is so rife and so firmly seated that effective treatment is difficult. On close observation it will be noted that the tissues in the dormant stage have a pale, dried-out appearance and are unusually insensitive and bloodless. The muscles have a dull, brick red color, do not twitch when pinched, do not bleed on section, on percussion yield a faint tympanitic note, and lack normal striations. The last named sign comes close to being diagnostic, for muscle, gangrenous from any other cause, fails to show loss of striation.

X ray of suspicious muscle is also characteristic and is seen in no other process. The plates show irregular light zones around muscle bundles, changing as the infection progresses to light spots growing ever larger.

The second stage, gaseous distention, may appear within a very few hours or develop more slowly. It is characterized by the old classic signs: hard edema, bronzed skin, sharply demarcated swelling, brownish serous discharge, an odor of putrefaction, slight often imperceptible emphysema, and such constitutional symptoms as dyspnoea, subnormal temperature, pallor, and rapid pulse. It represents strangulation of tissue, pressure from gas formation, and beginning gangrene. Accompanying the local manifestations is a rapid hemolysis that may go as low even as a million and a half reds. The hard edema and bronzing of the skin are undoubtedly the result of this marked hemolysis.

The third stage is the explosive. There is rapid progression of the local destructive process plus overwhelming invasion of dead muscle with the causative organism. This invasion is accelerated by the gas itself. Myriads of bacteria adhere to the minute bubbles which are forced by pressure along the intermuscular septa. Muscle bundles rupture in quick succession filling the wound secretion with fine bubbles and distending the subcutaneous tissue until it crepitates like lung structure. In and about the wound occurs a gelatinous infiltration—edema plus hemolysis. This gelatinous infiltration forms readily between muscle layers and spaces where its excellent anaerobic position makes it an admirable culture media. Blebs filled with a thin most offensive fluid burst forth in profusion on the bronzed, shiny, distended skin. The stinking odor of gangrene is everywhere apparent. Signs of systemic involvement make their appearance as a beginning acidosis.

The fourth and last stage is that of systemic toxæmia. It follows its immediate predecessor with scarcely a pause and is itself of fleeting duration. To the above sufficiently distressing picture is added delirium alternating with profound stupor, rapidly failing pulse, low blood pressure, high fever, dyspnoea, and all the signs of an impending fatal termination. The cause of death is not a blood invasion by the micro-organisms, not an acidosis which is secondary,

but a profound intoxication with definite and very potent poisons, the exotoxins from the infecting organisms and the tissue toxins from the action of the bacteria on muscle fibers.

Treatment to be effective must be promptly instituted in the dormant phase. The shocking mortality obtained early in the war can be laid solely and surely to the inability to make an early diagnosis. Cases reaching the fourth stage are moribund; the third stage, almost hopeless; the second, exceedingly critical; the first, hopeful. Occasionally because of high virulence of the infecting organism, lowered resistance, and other equally deleterious factors, early diagnosis and efficient treatment are unavailing and the patient dies. Not only must treatment be prompt, it must be energetic. Conservative surgery has no place in this class of infection. Under general anesthesia the wound must be widely opened up, all contused tissue removed, and especially every last bit of muscle that fails to twitch or bleed when cut must be ruthlessly excised. To be able to detect minute hemorrhage from muscle, tourniquets during operation are absolutely prohibited. In dealing with muscles it must be constantly borne in mind that the infection extends longitudinally and therefore every bundle that shows the slightest evidence of involvement must be courageously followed a little beyond the gross limit of disease. Needless to say every vestige of foreign material as denoted by X-ray must be removed. The same is true regarding hematomata. Clotted blood is an ideal culture media. Lay open by longitudinal incisions all suspicious muscular and vascular sheaths for the purpose of exposing all areas of gelatinous infiltration. Last but not least split skin and aponeuroses with parallel longitudinal incisions. Avoid all transverse incisions because of their interference with the circulation of distal parts. After complete hemostasis has been obtained the institution of Carrel-Dakin treatment affords the best means of arresting and overcoming the infection. Amputation is the measure of last resort. It should never be done in the dormant stage until efficient Carrel-Dakin treatment proves unavailing which is not often the case. Patients seen for the first time in the second and third stages very often demand immediate amputation in order to save life. It is not by any means al-

ways necessary to amputate high well above all possible limits of infection; at a point just above the area of skin discoloration has proved amply sufficient. All amputations should be done after the guillotine method, augmented by lateral incisions through skin, subcutaneous tissue, and fascia, extending well up the limb, followed by Carrel-Dakin treatment.

Sodium bicarbonate should be given early in large doses and continued for many days in order to ward off or mitigate inevitable acidosis. Antitoxin can be tried at any time. In the critical toxæmic cases it is always indicated in the hope that it will bring about sufficient improvement to justify a quick amputation. The antitoxin must be composed of anti-Welchii, anti-edematiens, and anti-vibrion septique; one alone is not effective. Each must be prepared and kept separately, but can be mixed just before using.

COMPOUND FRACTURES.

A large percentage of the battle wounds involved bones. Compound fractures, therefore, were extremely common. Not only did these lesions share the subsequent infection that complicated wounds of soft parts, but they also, because they offered the maximum possibilities, succumbed more easily and clung more tenaciously to infection. Once the problem of the management of compound fractures was reduced to terms of prevention of infection and vigorous antiseptic treatment great advances were made. All the heterogeneous varieties of splints for every conceivable fracture were scrapped in favor of a few simple efficient ones that were standardized.⁴ Splints that depended for their immobilization on circular bandages that possibly, and often did, constrict circulation were discarded and preference was given to those that maintained equally good immobility through the principle of extension. The compulsory immediate use of the Thomas splint alone greatly reduced the mortality from compound fractures, lessened the ravages of infection, and preserved countless limbs that would otherwise have been sacrificed by imperative amputation. No small factor in the

⁴ Standardized splints. Wire gauze 6x36 inches, Jones forearm "cock-up," Thomas traction arm, Jones humerus traction, Jones rectangular foot, Cabot posterior wire, Thomas traction leg, long Liston, Bradford frame, Balkan frame.

success claimed for the Thomas splint, however, was the strict observance of the dictum that the original splint remain undisturbed irrespective of frequent transfers of the patient, until union was firm. The application of the principles of wound closure and sterilization so further improved the results that Depage was able to show ward after ward filled with cases of compound fracture without a drop of pus.

A very short experience with debridement in compound fractures demonstrated that the bruising and laceration of soft parts extend far beyond limits hitherto suspected. Excision must, therefore, be even more extensive than in simple wounds. Loose bone fragments, often driven very far indeed, are to be carefully sought and removed but no fragment that is attached to viable periosteum or muscle should ever be sacrificed. A favorite site for small loose splinters is the exposed marrow. The medullary canals should anyway be thoroughly curetted for a depth of about three quarters of an inch, as it is into this soft cancellous bone that infectious matter is frequently driven. So essential is this curetttement that it is to be done even at the expense of removing a healthy fragment that blocks approach to the marrow. Often, however, such viable fragments can be preserved by carefully cutting and lifting the binding periosteum along one side, using that on the other as a hinge that will preserve its nutrition. As for the internal fixation of bone ends, that is rarely indicated at the primary operation and when done only the simplest and quickest methods are permissible. Plates of foreign material and autogenous bone grafts have proved useless, even harmful, at this stage of the treatment. On the other hand it is most important to mold all the comminuted fragments into a compact mass that fills the deficiency between the main fragments; it is even permissible, when necessary, to hold the mass in position by deftly placed sutures in surrounding muscles. Last and of the utmost importance is complete hemostasis, for nowhere as in bone does blood clot so encourage infection.

With the attainment of hemostasis the analogy between the treatments of simple wounds and compound fractures abruptly ends. Even in the eight to ten hour period primary closure of compound fractures proved most disappointing. It may be that the virulent bacteria of the war

zone account for failures that would not obtain in civil life; it may be that the extensive comminution of bone incident to war wounds and less often encountered elsewhere is the explanation; it may be any one or any combination of many other possible factors that is at fault: but the fact remains that in the recent war primary suture of compound fractures so often and disastrously failed that the attempt was pretty generally abandoned. Further experience, however, demonstrated that the bone involved had an important bearing; for it was learned that compound fractures of the clavicle, ulna, and radius could be closed by primary suture not only with an even chance of success but also without jeopardizing life or limb. Whether or not this limitation to primary closure is going to obtain in civil life can be answered only by further experience under circumstances less harrowing than those prevalent on the battle field.

Delayed primary suture proved equally disappointing. There was, then, nothing to do but to leave the wounds wide open and to pin entire faith on chemical sterilization, the original principle whose successful application had emboldened pioneers to develop and perfect the early closure of wounds. The faith was not misplaced. In no other class of cases have the results of Carrel-Dakin technique proved so brilliant. Fresh compound fractures, that is those received within twenty-four hours, can be completely sterilized in from three to four weeks when secondary closure will succeed in a good majority of the cases. This is indeed a marvelous achievement to be fully appreciated only when compared with the weeks and months of septic course that compound fractures often used to follow only to end in a chronic condition that sometimes never healed. It is freely admitted that the good surgery practiced is the indispensable fore-runner of the success of the sodium hypochlorite solution, but good surgery is also part and parcel of the Carrel-Dakin treatment constantly emphasized by its authors, so that no credit is to be withdrawn from its originators on that score. Furthermore, equally good surgery followed by other technique has never in compound fractures also equalled the success obtained with Dakin's solution. Continuous immobilization and extension is of course absolutely essential. The standardized

splints easily lend themselves to the requirements of Carrel-Dakin technique, nor do they in the least hinder or obstruct subsequent dressings. Extension by means of adhesive plaster has been superseded by equally efficient glues, such as Sinclair's.⁵ This glue melts at a temperature that does not burn skin, is easy and cheap to make, does not require shaving of the part, and of the greatest importance does not macerate the integument. It is applied hot with a paint brush stroked against the growth of hair. A strip of folded gauze or muslin is laid on the soft glue and smeared to the skin with a few strokes of the brush. The glue hardens smooth in about twenty minutes when it is capable of withstanding considerable steady pull.

OSTEOMYELITIS.

In spite of painstaking treatment some fresh compound fractures yielded to infection that, successfully driven from soft parts, became firmly seated in the more vulnerable bone. Almost without exception cases neglected from any cause developed bone infection of varying severity. The result was a vast collection of cases of chronic osteomyelitis whose prolonged course crowded the hospitals with a most discouraging amount of sepsis. Cases were operated time and time again only to be followed by the formation of persistently discharging sinuses. Much of the surgery failed because it was ill-timed. Experience established two dangerous periods in the course of compound fractures when operative interference is not only futile but harmful: first during the phase of acute phlegmon; and second at the time of union. Cases of non-union should be left alone eight to ten weeks. Even with the avoidance of these two fateful periods, however, surgery was discouraging until the Carrel-Dakin technique was perfected. The results then obtained far surpassed in brilliancy anything yet accomplished by that means, because it offered a certainty of cure for a condition otherwise chronically hopeless. While much of the credit reverts again to the solution of sodium hypochlorite, the recognition and application of a surgical principle is equally meritorious. Cavities heal by the collapse and consequent op-

position of their walls. Cavities in bone, which are the essential cause of the perpetuation of osteomyelitis, cannot heal because their walls are rigid and cannot collapse. Therefore, the cavities must be obliterated. When this is accomplished by the bold removal of irregularities of the walls, and over-hanging bone, healing occurs. A bottle shaped cavity in bone never heals. No adequate treatment of bone cavity analogous to the dentist's management of a tooth cavity has yet been devolved. The only successful procedure so far found is the conversion of the deep, narrow, irregular cavity into a wide, shallow, smooth, saucer-shaped area to be subsequently bathed with Dakin's solution. Tunnel cavities through bone will not close until either the roof, floor, or one side of the tunnel is excised. Seemingly excessive amounts of inherently healthy bone have to be sacrificed, but there is no other way. Not a small factor in the success of this extensive osseous debridement is the removal of occult bone areas potentially liable to necrosis and sequestration. It is surprising how quickly these large cavities fill. Granulations grow rapidly from adjacent muscle and other soft tissue; skin quickly epidermizes over them; osteoblasts invade them and form new bone; and in time the primary depression in the contour of the bone becomes leveled. Perfect immobilization of the wound must be constantly maintained until healing is fully completed.

FACE AND JAW WOUNDS.

Of not unusual occurrence were most distressing wounds of the facial and jaw bones that attracted particular attention, not only on account of the sometimes hideous disfigurement they caused, but also on account of the difficulty of dealing with them. The difficulty was the natural outcome of an attitude that contemplated dentistry and surgery as two distinct and separate professions. This feeling the war abolished. It is now an axiom that wounds involving the jaws and adjacent soft parts are to be treated concurrently and co-operatively by dentist and surgeon, not as formerly independently and in sequence.

The blood supply of the face is so good that the eight to ten hour limit for primary closure can be safely extended to twenty-four hours. While infection in wounds of this region is common, perhaps constant, it is never alarm-

⁵Sinclair's Glue.

Ordinary white glue	50 parts.
Water	50 "
Glycerin	2 "
Calcium chloride	2 "
Thymol	1 "

ing, and anaerobic infection is unknown. Temporary immobilization should be secured immediately and permanent splinting as soon as infection is localized or under control, and while the bone fragments are still mobile. Great ingenuity is required for each case is a separate problem. The constant aim should be to prevent disfigurement by preserving the normal contour of the face; and to provide good dental occlusion by proper alignment of fragments. Spontaneous union by filling in can be confidently expected when the loss of bone does not exceed half an inch; and is not impossible where the loss is as much as three-quarters of an inch. More than that requires bone grafting. The callus can, however, be considerably stretched during its formation, but must be done very gradually, so that it is, therefore, rarely necessary to sacrifice contour or occlusion for the sake of union.

Besides the control of hemorrhage and infection, which is perhaps the sole province of the surgeon, there is anatomic restoration, the particular job of the dentist. All three can and should be handled simultaneously. Dental prosthetic appliances are numerous and many of them predicate special training for their application. The temporary splints, however, are simple and their use easily mastered. If the upper jaw is intact a very efficient temporary splint is made by putting modelling composition between the teeth, pushing the lower jaw up into it in nice occlusion and holding it there by a chin cup. The composition rapidly hardens and preserves the reduction. At the best, however, it is but a crude makeshift to be used only in emergencies; for it allows neither adequate breathing space nor room for subsequent swelling of the parts. A far better device is the Gunning stock dental splint of aluminum. It consists of an upper and a lower cup, each filled with modelling composition and so hinged with its fellow as to simulate normal vertical jaw movements. The teeth are forced into the respective cups in a restored position, the jaws brought as near together as the splint permits, and a chin cup added. The Gunning splint has all the advantages of modelling composition alone, is standardized, cheap, and portable, and has the desirable additional feature of fixing the mouth open. Modifications of the above with outside attachments to fit individual cases, and

intermaxillary fixation by direct wiring, belong exclusively to the dentist. The same is true of the ingenious use of minute jack-screws which turn by turn gradually stretch the growing callus and further restore normal contour. On the other hand bone grafting falls properly to the surgeon. The best grafts are obtained from the nearer clavicle and are transferred by a two stage operation. The graft is cut and one end transferred to its new site leaving the other end as a pedicle attached by the sterno-mastoid muscle. At the end of ten days when the pedunculated graft has established circulation from its new insertion, the pedicle is cut and the graft swung into place. With its vitality in its new site assured the graft can be then so molded by the dentist with his interdental splints or direct wiring as to correct possible defects of contour or errors of occlusion.

SEPTIC JOINTS.

Nowhere perhaps in the body has infection been harder to deal with than in joints. For years septic arthritis has freely travelled a most destructive course leaving in its wake completely disorganized joints, often with persistently discharging sinuses, inevitably with ankylosis, partial or complete. The classical operation of wide incision and free drainage did not in the least alter the course of things, except to save life. The certain end results were permanently impaired, often nearly useless, limbs which the unfortunate possessors of at last sacrificed most willingly. Early in the war, therefore, wounded joints, because of their certainty of infection, presented such horrible problems that it is not perhaps surprising that premature amputation was often advised with the assurance that if accepted months of suffering and an eventually disabled limb would be avoided. Before the war a bold pioneer here and there had advocated as a substitute for incision and drainage thorough chemical cleansing of the opened joint which was to be closed immediately by suture. To the conservative surgeon the procedure savored of such extreme radicalism that it was frowned upon and generally ignored. Given free opportunity, however, with the many joint wounds incident to the war progressive surgeons succeeded in demonstrating that the idea of closing wounded joints was practical. From their bold enter-

prising work it has been proved that synovial membrane is itself markedly resistant to infection and fully able to take care of a not inconsiderable amount without damage to itself. It is the capsule of the joint and the extra-articular tissues that are vulnerable and to be feared. The fate of a wounded joint depends, therefore, upon the success with which wounds of the soft parts surrounding the articulation are treated.

Small perforating wounds without fracture generally heal promptly under simply compression and immobilization; more extensive wounds can be treated according to the rules already laid down. Within the eight to ten-hour period careful debridement of periarticular tissues and synovia, removal of foreign bodies, and thorough irrigation of the joint with mild antiseptic solution, can be followed by primary suture. Thereafter extension, immobilization, and a stern attitude of non-interference will bring about first intention healing in about 90% of the cases. Beyond the eight to ten hour period, and even when obviously septic, joint wounds should be excised, irrigated, and the synovia closed immediately by suture but with drainage of extra-articular tissues down to the synovia. Under such treatment it is surprising how quickly and completely in many instances the signs of intra-articular infection subside and how good a functional joint results. Long standing septic joints are of course another matter. Here, not only has the synovia been destroyed, but the joint cartilages have been eroded and the peri-articular structures thickened and deformed. Incision and drainage result only in endless discharge and a useless limb. Resections have not effected quick subsidence of sepsis nor favored bony union. On the whole amputation, as soon as the case is deemed hopeless, gives the lowest mortality, the shortest convalescence, and the best satisfied patient. The method devised by Speed of subcral drainage of the knee joint by a tube in the upper end of the pouch, the leg in extension in a Thomas splint and slung from a Balkan frame, turning the patient on his face for two hours twice a day, is worthy of further trial, and may be found to be the means of saving otherwise hopeless legs.

With eventual ankylosis certain because of the severe nature of the injury, sepsis, or what not,

it is imperative that ankylosis be obtained in the position of greatest usefulness. In the shoulder the humerus should be so placed that its axis makes an angle of seventy degrees with the vertebral border of the scapula. In the elbow a position of 110 degrees is the angle of choice. The knee should be very slightly flexed.

AMPUTATIONS.

Due entirely to the marvelously improved methods of treating and controlling severe infections, the indications for amputation have themselves been amputated one by one. Limbs that heretofore were deemed hopeless can now be saved. More and more should this idea be encouraged and tentative attempts made to save every limb; for the Carrel-Dakin technique offers positive means of preserving tissues that were formerly lost. Next to severity of injury and virulence of gross infection, the tourniquet is directly responsible for most amputations. Eighty per cent. of wounds whose blood supply has been cut off by tourniquets for a period of three consecutive hours eventually come to amputation. If a tourniquet must be used, place it always just above the wound in order that as few distal segments of the limb as possible may be deprived of blood. Then in the event of later imperative amputation section may be made just above the line of the tourniquet and several inches of limb that would otherwise have suffered from a higher placed tourniquet can be saved.

Stress is now laid not so much on the indications for amputation as on the kind of amputation indicated. The early struggles with grossly and virulently infected limbs, shattered beyond all hope, taught through the occurrence of continued sepsis in the stumps that the guillotine operation still really occupies a place in surgery. Though it results in a poor stump, almost impossible in the lower limbs, a poor stump on a live patient is far preferable to a good stump on a dead one. In other words the guillotine operation is solely a life saving measure. Even when healing is complete such stumps are impossible to fit satisfactorily with a prosthesis; and in the lower limbs where the stumps must bear weight the circular amputation seldom allows weight bearing because the scar crosses the end. Whenever, therefore, the guillotine operation is performed it must be with the ex-

pectation that later on recourse will be had to a secondary amputation. There is, however, this specific exception: if the secondary operation will convert a healed circular amputation in the middle third of the thigh into one in the upper third, it is preferable for prosthetic reasons not to re-amputate but to preserve the extra length of femur with an imperfect stump. All circular amputation stumps are to be left wide open and subsequently treated either according to the rules of delayed primary suture or, after sterilization by Carrell-Dakin technique, on the principle of secondary closure.

The management of bone ends has undergone radical changes through a correct appreciation of the role played by the periosteum and exposed marrow. These structures have been proved to be the guilty cause of those painful stumps that are accompanied by an over-growth of bone. The old theory that these tissues must be preserved is, therefore, no longer tenable. Instead, the entire circle of periosteum must be thoroughly scraped away from the bone end for a space of one to two centimeters, and the marrow curetted an equal distance. Rarely indeed does the compact bone so exposed suffer from lack of nutrition as evidenced by the later formation of sequestra which demand removal. On the other hand, painful stumps from exuberant osseous growth are absolutely prevented.

In general it should be a fixed rule to save every inch of limb possible. This is always feasible in the upper extremities where the kind of operation indicated should be that which preserves the longest stump. So great have been the improvements in prosthetic appliances that the loss of an inch from the stump to be fitted may fatally preclude the enjoyment of an artificial arm whose dexterous mechanical features depend entirely on that sacrificed inch. Moreover, every bit of muscle and tendon that can be preserved around the stump is of inestimable value. Very ingenious plastic operations have been devised which make use of these muscles and tendons to activate by voluntary contraction the inanimate fingers of a false hand.

In the lower limbs, on the contrary, the goal aimed at is a good weight bearing stump. To this end sacrifices in the length of bone and in the mass of muscles and tendons, blameworthy procedures in the upper extremities, are often justified in the lower limbs for the sake of

better weight bearing attainment. End bearing stumps are to be preferred because they preserve some sense at least of ground feeling. Emergency guillotine operations should be, therefore, so planned that at the secondary amputations end bearing stumps can be constructed without undue sacrifice of tissue. The old points of election for amputation have to a large extent lost favor which now redounds to considerations of usefulness and weight bearing. The attention paid to anatomical limitations is no longer positive but negative; useful and weight bearing stumps are possible at nearly all levels except as a general rule through joints or close above them. In the foot, however, Syme's amputation has returned into vogue provided the articular surface of the tibia is preserved and the malleoli are shaved off laterally.

SURGICAL SHOCK.

In spite of the unparalleled opportunities for observation and study of surgical shock that the war so generously supplied, the cause of the affection remains in darkness. Old facts regarding its phenomena have been amply confirmed and emphasized, and empirical methods of treatment to correct the symptom or syndrome that most appealed to individual investigators as the dominating feature, have been enthusiastically promulgated with varying degrees of success. Some of these are not even new but merely resurrected from a forgotten past. To reiterate, for example, that the fundamental trouble in shock is loss of blood plasma into the tissues is a wearisome, hackneyed statement that means nothing. Admirable as are the reports of special commissions in restating and correlating the facts, they offer nothing fundamentally new. Unfortunately lack of confirmation, not infrequently amounting to actual disagreement, but further befogs the main issue. On the whole, considering the mass of available material for study the total results are keenly disappointing.

However that may be, the knowledge gained is not entirely negligible. The enormous number of shock cases that occurred gave an unrivaled opportunity for investigation; and the frightful mortality from that cause alone added a stimulus to endeavor that was bound to be productive of something. The attack on the problem was made in what proved to be the ideal

way. Special shock teams were organized and equipped to deal specifically with shock cases. Near the operating theatres rooms were set aside for the exclusive use of these teams, whose almost instant results fully justified their conception. It was not that new specific remedies were suddenly and miraculously discovered, but simply that by intensive study and observation old facts regarding shock were correctly correlated and well-founded principles of treatment were deftly applied by new ingenious means which proved to be more potent.

Two distinct types of surgical shock are now well defined. The first is styled acute. It develops very quickly in men whose wounds are so trivial and whose exposure to the other usual causative agents is so fleeting and mild as to be negligible factors in its production, that it can be explained only by the highly organized nervous temperament which such cases universally exhibit. It has been not unfavorably compared to ordinary syncope. It is, however, a serious condition, often becoming critical, occasionally even fatal, without prompt and energetic attention which as in syncope is generally fruitful. The second type is the more familiar one of slower and more insidious development that aggravates severe bodily injury and is often fatally progressive in spite of every treatment. This is the kind of shock most frequently encountered, constituting the classical syndrome whose etiology is obscure and many of whose phenomena are imperfectly explained.

The influences of fatigue and cold on the production and aggravation of shock have long been recognized, but probably never so fully appreciated as now. So important have these causative or at least contributory, factors been proved to be that it must be forcibly emphasized that it is impossible accurately to estimate the true condition of a shocked patient until he has been rested and warmed. Fatigue cannot like cold be measured clinically, but if it is at all commensurate with the degree of cold observed in shock it must often be extreme. Low temperatures, even below ninety-two degrees, the lowest mark on the common clinical thermometer, were not at all unusual; and following shocking injuries to the sixth, seventh, and eighth cervical segments of the cord readings as low as eighty degrees were found. Fatigue and refrigeration are factors whose influence is not

only sufficient to mask the real state of the vaso-motor system, but is also capable of so aggravating its failing powers from other causes as to bring about a fatal issue. Whether cold and fatigue are cause or effect is beside the question; they are universally present in shock and by their presence aggravate the shock. In this connection it must not be forgotten that the summation of painful and emotional stimuli produces a state of fatigue as surely as does muscular exertion, and more perniciously. It has to be granted, therefore, that shocked patients are cold and tired, and such being the case it behooves surgeons not to size up things too rashly. These factors, moreover, can deceive in both directions; they may temporarily be the dominating causes and as such make a case appear worse than it really is; or through delay in the full disclosure of their sinister potentialities they may fail to refute a false sense of optimism wholly justified by the meagreness of other causative agents. The safe course lies somewhere between impatience and procrastination.

The most reliable measure of the degree of shock as well as the most accurate guide in prognosis is frequently repeated sphygmographic determinations, more specifically, diastolic readings. Blood pressure observations have absolute as well as relative values. A diastolic level of 60 mm. is the critical level; below 50 mm., fatal. A low diastolic pressure accompanying a systolic as high even as 100 mm. invariably affirms shock. If the diastolic reading fails to rise with appropriate treatment, irrespective of systolic behavior, the case is hopeless. The longer blood pressure remains low the more difficult becomes the matter of resuscitation; the more profound are the metabolic changes of reduction of alkali reserve and acidosis; the more unlikely is the eradication of the effect of these plus the original shock; and the more arduous is the restoration of equilibrium and control of the nervous system.

There is still no specific remedy to prevent or combat shock and there will not be until the fundamental cause of the condition is learned. The nearest approach to specific treatment, whether the shock is due to hemorrhage or not, is blood transfusion from suitable donors. Transfusion by any proved method after correct typing of donor and recipient is very rarely indeed accompanied by danger in the hands of

competent operators. Its efficacy is not only unquestioned, but its advantages are far superior to all other methods of restoring fluid to the vessels. Intravenous salt solution so quickly escapes back into the tissues that its action is very fleeting. Acacia, gelatine, and other colloid solutions compounded to correct this fault are not without danger and fail to remain in the vessels. The serious objection to transfusion that it is often difficult to obtain a suitable donor on the spur of the moment has been met by the discovery that blood corpuscles may be preserved in dextrose and stored on ice for as long as a month without losing their viability. Transfusion with stored blood has achieved results as good as those from fresh blood, and is without additional danger.

Many methods of treatment may perhaps be specific in the sense that they are such against one phenomenon alone. The fault with each of such remedies is that it postulates a single symptom as the primary and controlling factor whose successful elimination cures shock. These methods of treatment are based many times on purely theoretical premises, propped up by positive but incorrectly interpreted scientific facts, and exploited by empiricism. Often they prove curative only in the hands of their enthusiastic and perhaps biased sponsors. Sodium bicarbonate administration, for example, predicates an acidosis as the dominant feature which is by no means proved or generally accepted. Acidosis is best to be viewed not as always a causative factor nor as always the chief phenomenon, but is rather to be construed as only one of many frequent associated changes due to an unknown primary cause. It cannot be denied, however, that not infrequently bicarbonate of soda does cause improvement, but when it does so the case is best regarded as one in which for some reason acidosis plays a prominent part and other features are as strangely in abeyance. Its use would seem, therefore, to be restricted rationally to those cases of shock evidencing certain or impending acidosis, when its administration assuredly combats so much of the effects of shock as are due to the associated acidosis. The inhalation of carbon dioxide, either as pure gas or as rebreathing of the patient's own exhalations, is an accredited remedy based on the well known property of that gas to stimulate deep inspirations. Shallow, rapid, ineffectual

respiration is almost universal in shock. The diaphragm therefore fails to exert its full power of sucking blood into the right heart. The theory is that under carbon dioxide stimulation the excursion of the diaphragm is increased, a higher negative pressure is created in the thorax, and blood is thereby aspirated from the venous and capillary systems and returned to active circulation which corrects the fundamental fault. Whether or not it works out according to this theory, the fact remains that the method has produced some very startling results and deserves further trial.

When all is said and done, however, it is the common sense measures based on well proven facts that are most reliable. Once the true portent of the deleterious factors of fatigue and cold was correctly appreciated measures that would ably combat their dire influences were sought and instituted. The causes of fatigue in its widest sense are manifold, and are both physical and emotional. A certain degree of bodily weariness and mental usury, the latter manifested by either depression or excitement, was a constant sequela of the perilous exigencies of trench life. In other words the soil was prepared for the quick production of fatigue. The effect of the actual physical destruction of tissue was rapidly augmented by the steady flow of pain sensations from the wound and the exhausting play of the suddenly created emotions of fear, grief, and the like. Hunger and thirst soon added their quota until a well marked degree of mental and physical exhaustion was present. The obvious antidote was prevention. The wound itself must be spared all unnecessary handling and put definitely at rest by proper splinting. Rough manipulation, even with the laudable purpose of restoring anatomical relations, is often sufficient to shove balancing patients over the threshold into severe shock. Transportation must be reduced to a minimum. Even a comparatively smooth railway journey has a bad effect. It was early noted, for example, that a man with a compound fracture of the femur who in warm, clear weather lived in the open for several days without treatment, reached a hospital in better shape as regards shock than one who was picked up and moved without delay. Left alone the wounded man kept his leg at rest and thereby warded off or recovered from his shock. Such observa-

tions as these warrant close attention when other considerations compel his prompt removal from surroundings bristling with other causative agents. Transportation unavoidably provides painful stimuli whose summation produces fatigue or intensifies beyond his endurance fatigue already present. As some transport is inevitable the rest that cannot be assured by splints and posture must be invoked by the free use of sedatives. Morphine is the drug par excellence and should be given in half grain doses. At this point it must be sternly emphasized that much of the benefit from morphine is dissipated if the patient is at once started on his journey. The administration should be so planned that a period of at least fifteen minutes be provided for the injection to take effect; otherwise the premature induction of painful impulses breaks down the half made sedative barrier that even the full effect of morphine is unable later to close. As a substitute for morphine a British preparation, omnopon, is said to have about two thirds the sedative power of morphine and to be without the latter's depressing effect on metabolism and vital nerve centers. Duskeness of lips and finger nails indicates an impairment of oxygenation. It may be due entirely to the deficient respiration accompanying shock, but not always. Cyanosis is an unmistakable fore-runner of acidosis, which must be construed as at least an associated change of dire potentiality. Morphine, by further depressing respiration, may further increase cyanosis and hasten acidosis. The opposing dangers, therefore, of pain and exhaustion, cyanosis and acidosis, must be nicely balanced in arriving at a decision to give or withhold morphine.

While prompt removal from places of danger where fear of being hit again, of capture, and of death excite a rapid play of exhausting emotions, it often becomes a matter of nice judgment to decide whether or not the necessary transportation may not be the greater evil. Morphine is indicated in either event, in order to blunt these emotions. It is agreeably surprising to note how often merely an hour's rest changes a patient's general condition from seeming hopelessness to ability to endure transportation, or even surgical intervention, with impunity.

Equally as important as rest is the preservation or restoration as the case may be of normal body temperature. Cold is not only a powerful factor in the production of shock but it always appears coincidently with the development of shock. Unless guarded against, the absolute rest demanded will in itself, by inhibiting such natural safe-guards as shivering and deep breathing, lower still further the body temperature. It is imperative, therefore, that heat be applied. Many were the ingenious methods of so doing that were under the spur of necessity devised from inadequate materials. It makes little difference from what source external heat is obtained, but it must be constantly remembered that shocked cases are less sensitive to heat and demand, therefore, greater watchfulness against burns. Internally heat is supplied by the ingestion of hot fluids, nutritive if possible. In this connection it is well to bear in mind that shock cases are very frequently nauseated and that anything introduced into their stomachs may easily excite vomiting. Not only is coveted heat and nutrition thereby lost, but the exertion of vomiting further aggravates existing shock. On the whole the best drink is tea with milk and sugar, a combination that is palatable and much more often retained than any other. Measures to combat fatigue and cold must be carried out simultaneously and not in sequence, otherwise much of their potency is lost. Vigorously pursued many a seemingly hopeless case has been revived and permanently restored when all other measures against shock were unavailable. Until the primary cause of shock is learned and a rational specific remedy is devised, common sense measures offer the best and least indispensable methods of treatment.

ANESTHESIA.

For general anesthesia ether has again been proved to be the safest agent. The open method of its administration, however, was so chilling and irritating to bronchi already inflamed by the cold damp air of the trenches that post-operative pulmonary complications were frequent. The substitution of warmed ether vapor by closed methods promptly lessened the incidence of respiratory

sequelae and came to be generally used. A mixture of ether and chloroform in the proportion of sixteen to one has proved a pleasing combination preserving the safety of ether, devoid of the inherent dangers of chloroform, but retaining its ease of induction. Stern necessity courted the invention of simple makeshifts which would do away with the expensive and complicated apparatus devised for special refinements in anesthesia, and at the same time preserve their essential features. A rubber tube, for example, slipped over the spout of an ordinary ether can and connected with a nasal, pharyngeal, or intratracheal catheter, was a most simple expedient that gave very satisfactory insufflation anesthesia. Air entered the can through perforations in the top, passed over the ether, and thence was aspirated by the patient's own inspiratory exertions. Gentle agitation of the can plus the warmth of the anesthetist's hand served ably to concentrate ether vapor to any degree required. Doubtless many other equally simple and ingenious make-shifts were devised by men whose innate modesty or unobtrusiveness has tabooed publication or exploitation.

ROENTGENOLOGY.

Forward strides in the field of roentgenology have led in the last four years to miraculous developments. Without these remarkable advances the equally astounding achievements in surgery would have been greatly curtailed. The heretofore immobility of the X-ray plant which compelled Mahomet to come to the mountain has all been changed. There have been invented easily portable X-ray outfits, marvels of compactness, lightness, and ease of adjustment, whose products at least equal those coming from their immobile counterparts. This one feature of portability has put at the free disposal of surgeons wherever placed an indispensable adjunct to their art. No longer must patients forego the aid of roentgenology because their condition is so critical that the dangers of transportation offset the information the X-ray can afford.

Outside of other improvements, which, though in themselves brilliant, concern really not surgery but electrical technique, the exact

localization of foreign bodies in three planes constitutes roentgenology's greatest offering. The methods devised for localization can in general be divided into two distinct groups: the first localizes a foreign body by a depth measurement in a vertical direction below a skin mark; the other, in addition to a similar measurement, supplies also a surgical indicator. Ever since roentgenologists have been induced to supplement depth measurement from a skin mark by recording also the relation of the foreign body to a fixed anatomical land-mark, the surgeon's work has been greatly facilitated. As an example of the first, measurement only group, there may be mentioned the method which utilizes the principle of the parallax: given a plane surface, an object, and a movable light, the movement of the object's shadow on the plane surface will be proportionate to the distance of the object from the plane surface. With two such moving shadows the shadow of the object nearest the plane surface will move the more slowly. Using the foreign body to cast one shadow, a mobile rod on the apparatus is adjusted until its shadow has the same excursion as the other. From a scale the depth of the foreign body from the surface is computed and marked on the skin. In the other group the Hirtz compass is the most useful. This is an ingenious instrument of three parallel legs so adjustable to the irregular surface of the body that the base of the instrument preserves its level. The unique feature consists of an adjustable indicator swung from an arc that is firmly attached to the base of the instrument. The roentgenologist, either by the fluoroscopic screen or photographic plate, then sets the instrument on the skin overlying the foreign body and so adjusts the indicator that it not only points directly toward the foreign body but if pushed into the tissues would impinge upon it at a depth marked on the indicator. He then marks on the skin the three points on which the legs rest and tightens all the adjustments, so that the legs and indicator are firmly fixed in their relative positions. The indicator is so constructed, however, that it can be swung the whole extent of its supporting arc without losing its sight line. As the entire apparatus can be sterilized it is

simply handed to the surgeon who places its legs on the corresponding skin marks and follows the direction of the pointer to the foreign body. As the indicator can swing on its arc without losing its sight line it can always be so placed as not to interfere with the surgeon.

Fluoroscopy has also been developed to a point where its actual use in the operating room at the time of operation is perfectly feasible. Not only that, but the principle of stereoscopy successfully used for some time in roentgenology has been so applied that stereoscopic fluoroscopy is now possible. While the apparatus has had little more than a laboratory test, this was so successful that the invention promises soon to become of great value when it is desirable to operate under fluoroscopic control.

REGIONAL SURGERY.

When it comes to a survey of lessons learned that pertain to regional surgery it is found that outside the special application of general methods of wound treatment already described to meet regional requirements, little that is new has been gained. Be that as it may, however, the new conceptions of wound treatment are readily adaptable to all regions of the body and when utilized prove most efficient. Specialization in regional surgery had before the war been a recognized tendency that enabled certain men to become especially expert in limited fields. As the war progressed this tendency was fostered by the provision that every effort be made to segregate head wounds, for example, in special hospitals where they came under the care of surgeons specially fitted and trained to deal with them. Not only did patients thereby receive better treatment, but mortality tables were improved and opportunity presented for intensive study. At this point let it be emphasized once for all that what developments in regional surgery have appeared are confined strictly to traumatic lesions and that it by no means follows that the lessons learned apply equally well to the pathological conditions more frequently encountered in civil life.

HEAD.

The danger from early evacuation of op-

erated head cases is perhaps greater than in any other class of patients. It has been conclusively proved that delayed head operation is far preferable to prompt operation followed by immediate evacuation. Furthermore, undue haste in subjecting the patient to operation often proves to be a fatal error in judgment. For at least twenty-four hours after injury the brain is liable to be edematous and to extrude unduly if operated on in this interval; whereas delay allows not only absorption of the edema but also the formation of adhesions between dura and pia which lessen the liability of spreading infection over the brain surface. A slow pulse is a welcomed sign that recovery may follow and is not to be construed that operation is urgently needed, but rather is worth doing. Nor is it necessarily a sign of injurious compression demanding prompt relief; for it occurs with any wide exposure of the brain. And especially significant is the observation that a slow pulse, irrespective of the type of wound, means that the patient travels well. Moreover, immediate operation in many head cases is followed by an alarming drop in blood pressure. Yet the ever present danger of infection has to be reckoned with and the necessity for early operation on that score balanced against the advantages of delay. The immediate problem is mechanical and microbic and must be countered by mechanical and anti-microbic measures; the late problem is functional, frequently manifested only after a lapse of time, and must be met by measures sometimes in direct opposition to those immediately indicated. Only the nicest judgment charts the safest middle course.

Some interesting and valuable data have been obtained from many repeated blood pressure determinations that have considerable diagnostic and prognostic significance. A compound fracture of the skull with the dura intact causes a high systolic reading; whereas a penetrated dura, provided there is free drainage, gives a low systolic pressure. Any wound involving the ventricles is accompanied by a high systolic level. By converse reasoning, therefore, blood pressure determinations offer a clue as to the nature and severity of cranial injury. Whatever the early behavior of the blood pressure it tends to be-

come unstable, and when in that state constitutes a dangerous period for operation.

Depression of skull fragments is not the usual cause of symptoms and their immediate removal is not therefore to be undertaken rashly. Symptoms, paralytic and otherwise, are due not to depressed fractures but to destruction or commotion of brain matter not remediable by operation. As a general rule depressed fractures over the longitudinal sinus should in the first instance be left alone. A symptom syndrome comprising immediate spastic paralysis of the legs frequently associated with static paresis of the proximal segments of the arms, means occlusion of the superior longitudinal sinus and of the veins that enter it by a depressed fracture of the vertex of the skull. Surgical intervention in such cases gave very unsatisfactory results, whereas rest alone effected many cures.

Osteoplastic flaps of scalp and bone probably constitute the best operative technique. The dura, if uninjured or inexpressive of underlying injury, should not be opened. Attempts to reach missiles or fragments deeply imbedded in the brain are not justifiable when the procedure results in further injury, for they cause little subsequent trouble unless heavy enough to compress the brain when the patient moves. Guilty weight is present when the fragment is seen to travel by gravity through brain tissue, a course of events readily disclosed by repeated X ray plates. Advantage may be taken of this tendency to travel. By placing the wound area most dependent fragments may later be shaken out along the original wound track. On the other hand the brain resents sooner or later the presence of any abnormality in its immediate coverings or in its substance. While some small lesions or foreign bodies in the brain have apparently caused no trouble, others equally unobtrusive have years later inaugurated intolerable inconvenience due to late effects on the brain. Because it is impossible to foretell their final effect every reasonable effort to remove foreign bodies and eliminate abnormalities should be prosecuted. Above all, whenever operation is attempted it must never be stopped short of completion; palliative or incomplete operation is useless; let it be all or nothing. After all is said and

done it is the strict application of the general principles of wound treatment, early operation, debridement even of pulped brain, and closure, that is in cranial injuries most responsible for the elimination of the destructive ravages of sepsis. Without these agencies even the most skilled brain surgeon would be unable to cope successfully with the infection of delicate brain tissue that so often proves rapidly lethal or not infrequently permanently disabling. In every instance the brain should be covered and drainage if indicated limited to the scalp only.

Much of the operative difficulty encountered in head work has been due to general anesthesia. Especially is this true in intracranial operations where intense vascular congestion invariably permits profuse venous bleeding that hampers and prolongs necessary procedures. While in isolated instances intracranial operations had been performed under local anesthesia as a necessity, experience of head teams during the war has made local anesthesia the anesthetic of choice. It has so few objections and so many advantages that it promises to become universal. Contrary to expectation the dura has been found to be insensitive to a marked degree except when twisted or stretched, and except at the base of the skull where it is closely adherent to bone. The brain itself has long been known to be insensitive. A preliminary dose of a third of a grain of morphine thirty minutes before operation is routine except in the presence of marked intracranial pressure. The best anesthetic is a solution of procaine 0.5% to every ounce of which is added 15 minims of adrenalin, 1:10000. As much as six ounces of this solution have been used without causing toxic effects. Massive infiltration of tissues to be incised and a wait of at least fifteen minutes between injection and operation are indispensable factors for success. Extensive osteoplastic flaps and all decompression operations can be performed painlessly. The adrenalin proves such an efficient hemostatic that troublesome oozing is conspicuously absent, which not only adds to the surgeon's comfort but greatly shortens the length of the operation. Already current medical literature records instances of enthusiastic approval of local anesthesia for cranial

operations, showing that the procedure is being eagerly welcomed and quickly adopted.

SPINE.

The lack of experience and the absence of knowledge of the pathology of gun shot wounds of the spine led to a stagnation of effort in this region. In civil life there had been always a reluctance to tackle by surgical interference injuries of the spinal cord. This reluctance is directly traceable to the observation that many times cases improve without operation in spite of abnormal conditions surrounding the cord; that in most instances cases operated either die or recover much as would have been their fate without operation; and finally that the technical difficulties of classical laminectomy, the loss of blood it entails and the doubtful results it affords, make operative measures too risky. War experience has done little to mitigate the objections.

Paraplegia, partial or complete, remains the diagnostic sign of cord injury. Three distinct types of paraplegia, however, are to be recognized: one in which the symptoms are due to local concussion; another in which the cord is organically severed; and a third in which paraplegia develops only after a lapse of time.

The paralyzing effects of local concussion are often marked, but usually begin to clear up within a few days. Slight local injuries, however, even when indirectly inflicted, are frequently associated with extensive edema, hemorrhage, softenings, and not infrequently with ascending cavity formation which may extend a considerable distance both above and below the level of the original injury. Such changes can obviously not be relieved by any reasonable operation; and the fact that, apart from secondary cavities that develop later, they occur immediately or within a very short time of the infliction of the injury, diminishes the favorable prospect of any surgical interference. When the track of the missile and X-ray plates rule out vertebral injury that might compress the cord the immediate onset of paraplegia is due solely to concussion. If, however, the symptoms fail to clear up as expected, the probabilities are that the later formation of blood clot has by compression of the cord perpetuated the paraplegia primarily due to the concussion whose effects have dis-

appeared. In this comparatively small group of cases partial laminectomy for the removal of the clot is absolutely indicated. Not only is the operation the sole chance for permanent relief, but its results are brilliantly successful and marred by an insignificant mortality.

When the path of the missile demonstrates that paraplegia is due to organic division of the cord the case is hopeless. All operative interference is absolutely contra-indicated. Unfortunately complete transverse destruction of the cord is often very difficult of immediate determination. Even relatively slight injuries of the cord often produce for the first few days,—the very period when operation offers the best chance of success,—symptoms that may be confused with those of total and irreparable damage which contra-indicates operation. In such a dilemma there is some comfort to be derived from the observation that while the symptoms undoubtedly are in many instances largely or in part due to remediable compression of the cord by either a missile or fragment of depressed bone, the immediate intra-spinal lesions due to concussion already exist and are irremediable by operation. Some clinical indication, therefore, of the severity of spinal injury is urgently necessary before operation can be reasonably undertaken. The safest guide is afforded by the form and character of the sensory disturbances, and especially by the changes and modifications in the reflexes of the affected limbs.

The type of paraplegia that develops only after a varying lapse of time is as a general rule the most favorable for operation. The paraplegia is due to compression either from the tardy formation of blood clot or from the displacement of a bone fragment caused during movement, or perhaps to both. In any event compression has been of short duration and permanent injury to the cord is therefore unlikely. If operation is performed immediately the results are uniformly brilliant.

Wider knowledge, therefore, has not greatly extended the scope of operative interference. The tendency is toward partial rather than classical laminectomy, and as in cranial work to favor local instead of general anesthesia. Increased confidence has been gained in the

utility of placing muscle graft over an opening in the spinal membranes when leakage of cerebro-spinal fluid has complicated the operation; for an intact spinal dura has become of notable prognostic omen.

CHEST.

Wounds of the chest had been seen a long time before surgeons recognized that such cases must be treated on principles which govern in other parts of the body. When so treated, with such modifications as the exigencies of the region demand, chest wounds need no longer show the frightful mortality formerly obtained. Success will not follow, however, unless it is appreciated that it is unnecessary actually to pierce the chest wall in order to cause intra-thoracic injury; for tangential wounds of the parieties only may be accompanied by intra-pleural damage almost as severe as though the missile had penetrated the chest wall or even traversed the lung. Worthy of equal consideration is the discovery that injury to the other lung by contra-coup is not at all uncommon, and is evidenced by subpleural and intra-pulmonary hemorrhages, large and small, that readily succumb to broncho-pneumonia. As in all wounds the immediate danger is from hemorrhage and shock; sepsis is the late peril. The immediate dangers, owing to the anatomy and physiology of the region, may be complicated and aggravated by the sudden or gradual formation of a pneumothorax.

The consequences of pneumothorax are by no means limited by the effects of collapse of that lung. Air in one pleural cavity, under ordinary atmospheric pressure, compresses the opposite lung and displaces mediastinal structures toward the uninjured side. Suddenly created pneumothorax precipitates these changes so quickly that natural compensatory measures are for the moment inhibited. Respiration is immediately and seriously embarrassed. Rapid and labored respiratory efforts throw the mediastinal structures into unfamiliar oscillations or flutter that rapidly induces a state of pleural shock. Acting either alone or in conjunction with ordinary shock pleural shock is very quickly fatal.

Pneumothorax becomes, then, the immedi-

ately pressing factor to be considered in all chest wounds. The small penetrating wounds of rifle bullets are so promptly plugged by the instant collapse of surrounding soft tissues that pneumothorax is entirely prevented. Somewhat larger wounds, after slowly allowing partial pneumothorax to form, become effectually stopped with blood clot before the condition is complete, and its evil intents are thereby checked. Such wounds are almost never followed by any of the distressing symptoms incident to pneumothorax, and left alone do perfectly well when uncomplicated by hemorrhage or sepsis. It is always the large, gaping openings permitting immediate, complete, and persistent ingress of air, the so-called sucking wounds, that quickly induce all the attendant evils of pneumothorax. And yet if nature's efforts be promptly imitated and soft tissue, even skin alone, be so sutured as to seal the pleural opening, much of the imminent danger is effectually eliminated. Wounds so lacerated as to prohibit closure by suture can be very satisfactorily sealed with an impervious dressing bound tightly to the chest. Needless to say prompt checking of the to and fro current of air lessens the inspiration through the wound of infected material that leads to subsequent pleural sepsis. Fortified by rest, and the administration of sedatives when indicated, cases so treated revive in a most astounding manner that enables them to cope successfully with later complications equally serious. Strange as it may seem, later operative pneumothorax is curiously less dangerous than formerly thought. Complicated pressure cabinets, both negative and positive, as well as intratracheal insufflation, all of which were devised to preserve lung expansion and prevent pneumothorax, have to a large extent been discarded as unnecessary. As a matter of fact an expanded lung constitutes a distinct difficulty in thoracic surgery, for only a collapsed lung can be palpated and manipulated at all nicely. Furthermore, pneumothorax is far from being an unmixed evil. The collapse of the lung that invariably ensues arrests by compression an otherwise often fatal pulmonary hemorrhage. With to and fro tide of air checked, the presence of pleural air becomes so beneficial in arresting

bleeding that its loss by absorption must often be replaced artificially lest expansion of lung stretch or displace the clot that occludes a torn pulmonary vessel. In fact, a deliberately produced artificial pneumothorax by injecting air through an aspirating needle may easily prove to be the forlorn-hope measure that arrests hemorrhage in a patient too exsanguinated to withstand a more radical procedure.

Chest injuries that do not succumb to shock, yet prove fatal within the first few hours, die of hemorrhage. Very often the two are so closely and interdependently related that they cannot be differentiated and death is due to shock-hemorrhage. As operation cures the latter but kills the former, decision is often agonizing. Be that as it may the proper attitude is to expect hemothorax in every chest wound and be prepared to deal with it. Blood in the pleural cavity is, like air, not entirely of evil import. It gradually arrests bleeding by compressing the lung that is lacerated, which is most desirable provided hemostasis occurs before the patient becomes exsanguinated. Once checked, the bleeding does not recur. Patients die more often from external hemorrhage in the wound than from intra-pleural. Hemoptysis in chest wounds is seldom fatal and secondary hemoptysis from that cause is very rare. Hemothorax, then, is not to be dealt with rashly. As a rule the profound shock that accompanies it serves sufficiently to contra-indicate radical operative measures. An attitude rather of keen watchfulness is to be taken. The level of the nipple is arbitrarily assumed to be the upper limit of a hemothorax that does not threaten life by exsanguination. While hemothorax certainly checks pulmonary hemorrhage by compressing the injured lung, it may also compress the heart and opposite lung and by its massiveness prove fatal by asphyxiation. Mechanical interference with respiration, therefore, constitutes the only immediate indication for intervention which is best limited to aspiration of only enough blood to relieve the distress. If more is removed there is danger of secondary hemorrhage from lung expansion that tears away the clot from a torn vessel. If mechanical distress returns it is best not to repeat aspiration but to operate radically and

check the hemorrhage. At the end of a week, however, if all goes well, danger of such secondary hemorrhage is eliminated, and it is best to aspirate freely in order to avoid the formation of adhesions which by preventing lung expansion court the onset of bronchopneumonia. Because of the sinister possibilities of adhesions it is permissible to aspirate the blood at any time and immediately replace it with air which just as effectually arrests bleeding and is not so liable to promote the formation of distorting adhesions. Furthermore, a hemothorax is very liable to infection which when it occurs runs the distressing course of an empyema. On the other hand, pneumothorax is more often accompanied by pulmonary infections, while a hemothorax bears the brunt of infection and spares the compressed lung. It is only natural, therefore, that perfectly tenable differences of opinion exist as to the relative value and innocuousness of air and blood in the pleural cavity. Both accomplish the same purpose in the same way; each has its merits and faults that are to be nicely balanced in individual instances before a decision is made.

There are of course cases in which the laceration of intra-pleural structures is so extensive, and the resultant hemorrhage so profuse, that they are obviously hopeless. Such patients die within a very few minutes. Between these cases and those whose hemothorax for the moment at least is to be treated conservatively, there exists a large number of border-line cases requiring the keenest judgment. Immediate radical operation will save a surprising number of these. The wise surgeon stands ready to interfere the moment he is convinced from the patients behavior that conservative methods are failing to check the hemorrhage. Local anesthesia is the method of choice. The chest is to be opened widely by subperiosteal resection of the fourth rib from the junction of bone and cartilage posteriorly for six or seven inches, followed by incision of the pleura through the periosteal bed. This approach gives the best exposure and should be chosen irrespective of the location of the injury unless the latter offers approximately as favorable a site. Strip the periosteum and pleura carefully from the pos-

terior surfaces of the adjacent ribs above and below, when it will be easily feasible by suitable retractors to spread the wound sufficiently wide to permit free entrance of the surgeon's hand. Through this wound the collapsed lung can be easily delivered and freely palpated. Pulse and respiration are not at all seriously affected if the lung is handled gently. Wounds of the diaphragm are first attended to, and through the rent any abdominal measure that is indicated should be quickly performed, enlarging the diaphragmatic wound if necessary. Shell fragments, bone splinters, and bits of other foreign material are a serious menace and must be removed even though fresh incision into the lung be necessary. All wounds in pulmonary tissue must be treated by thorough debridement and firmly sutured, not only to control hemorrhage, but also to remove contamination and protect the adjacent pleura which is less resistant to infection. It is surprising how well the elastic lung lends itself to suture without tearing. Mediastinal missiles are to be left alone. Attempts at their removal are surely followed by disaster, for mediastinal structures are strangely adverse to manipulation. After gently wiping the pleural cavity clean of free and clotted blood suture the wound in the pleura, very accurately evertting the edges in order to bring serous surfaces smoothly together. It is at this stage that the value of placing the incision in the periosteal bed is appreciated, for the fibrous periosteum prevents the sutures from tearing through the delicate pleura. Drainage should never be carried into the pleural cavity but only down to the sutured serous membrane. The last step is the aspiration of intra-pleural air, in order to stimulate lung expansion and prevent distorting adhesions. After operation patients are kept in a semi-upright position, given morphine judiciously, and never transported under eight days.

However managed, all chest injuries are sooner or later liable to infection. The lesions vary from broncho-pneumonia, abscess, and gangrene of the lung to massive empyemata. Anaerobic infection of hemothorax is common, about 10%, and is most frequently due to the *bacillus Welchii* and *bacillus sporogenes*.

Jaundice, especially if associated with epistaxis, is an index of a very severe type of infection with anaerobes. The war has added little that is new to operative measures for dealing with all such late complications, but post-operative care has been, especially for empyema, completely revolutionized. The immediate application of Carrel-Dakin technique to this affection has made the care of such cases a pleasure to all concerned. Through the operative drainage wound Carrel tubes are inserted towards the apex of the lung, into the axilla, across the diaphragm, and down into the posterior costo-phrenic space. Regular instillations of Dakin's solution quickly checks purulent discharge, obliterates all odor, and promptly institutes a marvelous improvement in the patients' general condition. Occasionally a broncho-pleural communication sucks Dakin's solution into the throat with most distressing symptoms, but generally a change in posture or more gentle instillation overcomes the difficulty. In time bacterial count of the secretion demonstrates sterilization of the cavity. The tubes are then withdrawn and the wound sealed with an impervious dressing when healing usually takes place. X ray plates of the failures, after the sinus has been infected with barium, show either necrosis of rib, a pleural pocket with a small track leading to the main sinus, or, which is not at all uncommon and very important, an isolated collection of pus totally independent of the main lesion. Under appropriate treatment all but a very few such cases can be completely healed.

EMPYEMA.

It is only biased enthusiasts who still maintain that empyemata are always cured quicker and surer by Carrel-Dakin treatment than by any other method. First reports of cases so treated, it is true, showed marvelously quick sterilization of cavities amply proved by bacterial count and culture control. The wounds were, therefore, closed by secondary suture and the patients discharged as cured, only to develop weeks later symptoms which on investigation denoted persistent pleural sepsis that only further operative treatment eradicated. When it is remembered that the Car-

rel-Dakin technique as applied to empyemata transgresses all the surgical principles that are vehemently stressed as essential fore-runners of its success, it is not so surprising that the method sometimes fails completely, and not infrequently proves to be no quicker nor surer than other methods. An empyema is essentially a bottle shaped cavity half of whose walls are rigid and the other half equally impossible of collapse. Carrel-Dakin technique cannot accomplish its marvelous results in such a cavity wherever situated, and should not be expected to. It is solely because of these ineradicable limitations that Carrel-Dakin treatment has been somewhat disappointing in empyema. What it does accomplish, however, in these cases that is distinctly worth while, is promptly and markedly to lessen the discharge; is to keep the patient smelling sweet and clean; is to make the dressings easy; and is to improve the patients' general condition more quickly and more noticeably than does any other method of treatment.

The influenza epidemic with its high incidence of complicating empyema aroused exorbitant hopes that at last through sheer experience with vast numbers definite conclusions regarding the proper management of pyothorax would be established. Not only were expectations dashed, but only recently has any order begun to emerge from the chaos into which the whole subject was thrown by the combative adherents of early and late operation. As the two camps were about equally divided, published equally favorable statistics, and later admitted respective statistical fallacies that exactly offset each other and preserved relative equilibrium, confusion was further confounded. Gradually a semblance of order is being restored by mutual concessions compelled by irrefutable facts. In influenza pleural effusion develops early and massively. At first the effusion is serous and becomes purulent only after it has persisted for a week or ten days. Cases that are fatal in the period of developing pleural effusion die, not from the effusion, but from the concurrent pulmonary process, except when by its massiveness the former mechanically embarrasses cardiac and respiratory action. Conservative management of influenzal pleural ef-

fusion compels an attitude of non-interference until signs of cardiac or respiratory difficulty supervene, when intervention is to be limited to the aspiration of sufficient fluid to afford relief. With a return of embarrassment aspiration can be safely repeated as often as necessary and a fair percentage of cases will by this means alone escape a frank empyema and recover. Not until the fluid is purulent should operation be undertaken. As a rule, by the time the effusion has become purulent, the pulmonary process has so far subsided that operation does not entail further risk on that score. Unfortunately, opinion is about equally divided between the merits of closed or open operation with or without Carrel-Dakin treatment, and mortality and morbidity statistics fail definitely to settle the dispute. The probabilities are that both methods are equally good and that the choice of method resolves itself into individual preference and ease of after care.

ABDOMEN.

An expectant attitude in regard to abdominal wounds held longer than it should have solely because of inadequate provisions for early operation. Experience gained in the war fully confirmed the opinion long held that abdominal trauma, whether penetrating or not, demands in the presence of any sign of internal injury immediate exploration. Clean-cut, small, penetrating wounds made by high velocity bullets are no exception; for such missiles however innocuous in other regions raise havoc with hollow abdominal viscera. The necessary operative technique for dealing with traumatic lesions of the abdomen was with very slight adaptations copied directly from that already practiced in civil life, and experience of general surgeons in the war has added little of importance in the way of technique. There is noted a tendency to use fewer suture lines in gastro-intestinal work; but this was doubtless practiced for the sake solely of speed in operating and will probably not prevail. Nevertheless, the experience demonstrated the security of even one suture line when time was at a premium. End to end anastomosis has gained a preference over lateral now that the fear of leakage at the

mesenteric angle has been once for all dispelled. Abdominal drainage as usually practiced proved even less effective than suspected. No new ideas were offered for the management of peritonitis; and the sheet anchor against infection in all other regions, Carrel-Dakin technique, is strictly contra-indicated in the abdomen where Dakin's solution causes gross mesenteric hemorrhages and dissolution. Intra-peritoneal wounds of the bladder may be safely sutured without suprapubic drainage of that viscus, but extra-peritoneal wounds must be drained.

Abdominal tenderness some distance from the wound denotes probable intra-peritoneal injury. Protruding omentum is not in itself particularly dangerous but is an infallible indication for operation because it signifies visceral injury. Wounds of the chest, back, and buttock, not directly involving the abdomen, may cause retro-peritoneal hematomata that closely simulate symptoms of intra-abdominal injury. Passage of flatus after injury negatives lesions in the large gut, especially the descending colon. Distension of wounded hollow viscera does not rule out a wound of exit. Antero-posterior wounds are attended with a higher percentage of recovery than are oblique, transverse, or vertical wounds; and wounds of the lateral abdomen are less grave than median. Abdominal injuries complicated by wounds of the buttock always do badly.

BLOOD VESSELS.

As a rule, wounds of blood vessels, large enough to permit of operative surgery, proved so immediately fatal that little opportunity was presented for the development of this branch of surgery. And when the patients survived the initial hemorrhage, the nature and extent of the wound held the severed ends of the vessel too far apart to admit of immediate repair. The use of Tuffier's tubes in such contingencies very often tided over the critical period when adequate collateral circulation was being established. The tubes generally become occluded with blood clot in from twenty-four to seventy-two hours and should be removed as soon as pulsation in the vessel distal to the wound has ceased.

With complete division of a main arterial trunk and failure of collateral circulation the definite line of demarcation seen in civil practice marking the line of gangrene was curiously missing in war wounds. Site for amputation had to be determined, therefore, by noting the place where the limb was cold and discolored and where capillary circulation was active as shown by the return of blush after the blanch of pressure. Moreover, arrest of blood current at a point considered favorable for ligature in civil practice was often followed by gangrene when the arrest was due to gun-shot injury. Even small perforating wounds without muscle or bone laceration were unhappily followed by such sequelae. The popliteal and both tibials stand out as arteries injuries of which are especially dangerous to the vitality of the limb.

Lateral wounds of vessel walls lacerate the adventitia and media only at the site of the lesion, but in the intima lacerations radiate for considerable distances up and down the vessels. The rarest condition is found in what are known as dry wounds, in which a small arterial perforation is quickly plugged by a clot held in position by perivascular tissue. Spontaneous hemostasis occurs and rapid aseptic healing usually follows. Wounds that are dry for eight to ten hours, however, may then bleed and give rise to the first intimation of vascular injury.

A much more common condition is diffuse hematoma. The peri-vascular tissues fail to hold and blood is extravasated until its tension equals blood pressure. Further bleeding is then checked spontaneously and a visible tumor appears when the vessel is superficial; a diffuse swelling when it is deep. The tumor mass undergoes either complete organization and absorption, or its center, subjected to arterial pulsation, softens and disintegrates while its periphery hardens and forms the sac of an aneurysm. If the adjacent vein was injured at the same time the combined organization and disintegration results in an arterio-venous aneurysm. In all hematomata and aneurysms the immediate branches of the main artery are often concurrently involved and prevent the establishment of a collateral

circulation that would otherwise save the limb.

Absence of pulsation distal to vascular injury is not a safe criterion of permanent occlusion, for the vessel may be only temporarily plugged by a clot due merely to contusion from direct impact without laceration. The lesion is the result essentially of an undue stretching, locally of the intima only; locally of intima and media; or circularly of intima and media around the entire circumference of the vessel. The first is almost symptomless; the second is recognized by distant emboli denoting thrombosis in the injured vessel; and the third is detected by the fusiform dilatation with invariable and extensive thrombosis.

All hematoma should be evacuated and the cavity cleaned by debridement. The management of the wounded artery itself must be adapted to circumstances. Ligation is the simplest, quickest, and generally the best. When done, the vein as well must be tied. In as much as ligation of a main artery in the presence of a hematoma is followed by partial or complete necrobiosis in one third of the cases, it is well before ligating to test the efficiency of collateral circulation. Under temporary compression a small incision as distally as possible should bleed; the distal end of the compressed main vein should fill; and blood should escape from the distal end of the wounded main artery. If these signs fail collateral circulation is not dependable and vascular suture or amputation must be chosen.

Paralyses, independent of concomitant nerve lesions, may follow arterial injury and are not in all instances by any means creditably accounted for as types of Volkmann's ischemic paralysis. They are rather of reflex origin, not aptly named angiotic paralyses, and unlike Volkmann's often recover. They follow arterial injury that does not effect complete blockade of the vessel, and are characterized by a flaccid muscular paralysis distally, with a wide spread loss of cutaneous sensibility that extends even above the wound. The affection has been successfully treated by excision of the sympathetic nerves that course the sheath of the injured artery, periarterial sympathectomy. The muscles have in 50% of the

cases regained their tone and power, not always at once but eventually. The operation is followed by arterial contraction for the first ten to twelve hours when a reaction sets in that results in vasodilation which is more or less permanent. This vasomotor sequence is perhaps worthy of pertinent consideration as a possible explanation of tardy hemorrhage in the so-called dry wounds of arteries.

PERIPHERAL NERVES.

Of all the surgical specialities none has had graver problems in diagnosis and therapy than those that fell to the lot of neurological surgeons. It is unhappily true that most of the moot points, vital as they are, must wait still longer before certain judgment can be pronounced. Prognosis remains especially uncertain. Why, for example, 60% of nerve lesions recover spontaneously with postural, mechanical, and electric treatment and 40%, though apparently no more serious, do not, cannot yet be explained. Because a nerve fiber is incapable of stimulation does not mean that it is not in a condition of possible spontaneous regeneration. Injured nerves exhibit such a surprising tendency to recover in time that it is always safe to defer reparative operation for a month where soft parts only are involved; for two to three months where bones are implicated; and indefinitely as long as progress toward recovery is shown.

Nerves withstand infection remarkably well. They should, therefore, when divided, be united at the first deliberate operation irrespective of the condition of the wound. Fifteen inches of nerve may be stripped without fatally destroying its capillary circulation. The severed ends should be approximated with interrupted sutures that pass only through the sheath and that do not twist the nerve. As union of nerve structure is well advanced in four days, cat-gut is the suture material of choice. Always lay the sutured nerve in healthy tissue, preferably muscle, as far from the site of the later scar as possible. Fascia, fat, or other tissue tubes wrapped around the nerve are of questionable value and may be harmful by constricting the nerve and inhibiting new blood supply. Transplantation of one nerve into another is much less

effective than tendon transfer. From six to eight weeks is required for firm healing of a nerve, during all of which time it must be protected from the slightest stretching.

Late operation for nerve injury is indicated, for complete division of a trunk; incomplete division when progress toward recovery ceases; and for severe neuralgic pain. The last named indication has received considerable attention because of its frequency and because of a better understanding of the causes of the pain. Outside of those cases where nerve trunks are caught and pinched in scar tissue, pain in injured nerves and their distribution is due to neuromata. A neuroma is merely an over-growth of nerve fibers outside the sheath and represents nature's perverted efforts of axis cylinder extension. Neuromata are central, lateral, or terminal, depending on the nature and site of the original wound of the nerve. Wherever found neuromata are to be widely excised, sectioning nerve structure until no further scar tissue is found.

For complete division of a nerve trunk the earliest prudent occasion must be chosen for operation. Delay until concomitant wounds of bone and soft parts are long healed is not only justifiable but should be the rule. It is especially in regions deprived of innervation that bacteria survive latently for long periods only to jump into virulent activity when disturbed. Throughout the interval of waiting, however, every means of massage, electricity, and hydro-therapy should be constantly invoked to prevent contractures and to preserve suppleness of joints and muscles to the end that the nerve may later have healthy tissues to innervate.

The cases showing incomplete division of nerve trunks call for the most deliberate judgment. Many of these cases recover spontaneously, though periods of arrested progress are not infrequently most disquieting and confusing. There is often, not actual anatomical interruption of conductivity, but merely a physiological one. Differentiation is at times exceedingly difficult, usually impossible without repeated painstaking examinations; but as a rule in physiological interruption muscle tone is more often preserved than not. The

lesion in physiological interruption is frequently extra-neural due to compression by scar, bone, or foreign body, without definite destruction of neurons until pressure has been long maintained. On the other hand the lesion may be the result of a simple contusion without laceration, causing either an intra-neural hemorrhage or merely a localized edema, both of which through compression of neurons give rise to physiological non-conductivity. All such intra-neural lesions tend to recover without permanent destruction of nerve fibers. Whether physiological interruption is due to extra-neural or intra-neural causes is most difficult of decision; and as time goes on decision becomes urgent because, if extra-neural conditions persist, they may easily cause irreparable and permanent damage, while intra-neural lesions tend to improve spontaneously by absorption of exudate, and almost never grow worse. When in doubt and decision presses, it is always justifiable to cut down on the nerve and determine conditions by actual inspection which is a tolerably safe guide.

TRENCH FOOT.

There has come out of the war a new disease, trench foot, which lies somewhere between chilblain and frost-bite, and is characterized by painful anesthesia, edema, phlyctenules, gangrene, and sloughing. It follows exposure to wet and cold, not necessarily freezing, and is aggravated by inactivity, cramped posture, and tight boots. Mild cases complain of numbness, cold, pain, and tenderness of a burning tingling character most marked at points of greatest pressure such as the heel and ball of the foot. The part affected shows discoloration varying from slight hyperemia to purple; and anesthesia to touch and pin prick. Moderate cases have in addition severe pain on exposure to heat and on motion of the joints in the affected region. The most severe types show also blebs, edema, and local gangrene.

Differential diagnosis is concerned only with chilblain and frost-bite. The former is accompanied by intolerable itching; the latter occurs more often in very cold dry weather and shows more massive destruction.

Treatment is prophylactic and symptomatic. Adequate protection from cold and wet is primarily essential. The most comfortable and effective dressing is a powder composed of boric acid and camphor. Whether definite skin lesions are present or not, antitetanic serum should always be given in prophylactic doses. Radical intervention is strictly tabooed; all that is required is patience until spontaneous separation of the slough and nice demarcation of the line of gangrene occur, when the obviously devitalized tissues may be trimmed away. Convalescence is prolonged and some permanent disability is not so very infrequent.

BURNS.

There seems to be a wide spread feeling that the war has revolutionized the treatment of burns, which is entirely erroneous. Newspaper exploitation of a new remedy credited with exorbitant journalistic virtues is alone responsible for the feeling. The truth of the matter is that the importance of treating burns as aseptically as are all other wounds was so emphasized that much of the credit usurped by paraffine mixtures rightly belongs to asepsis. Nevertheless, there is much virtue in these various mixtures which, irrespective of other ingredients, are essentially paraffines of low melting point. They are applied directly to the burned surface, either painted on with a camel's hair brush or sprayed on from a special atomizer, when the mixtures immediately harden. The only further requirement is a few layers of gauze. These paraffines form perfect protective dressings as painless in their removal as in their application. Beneath them fine healthy granulations rapidly appear with no tendency toward exuberancy. Epidermization is swift, and the terminal scar is soft and pliable pleasingly free from annoying contractures. As a matter of fact, however, the share of credit that redounds to paraffine mixtures is by no means exclusive; for equally as effective, painless, and satisfactory a remedy for burns is

found in dichloramine T. Furthermore, the latter has antiseptic properties that paraffine mixtures lack which adds a welcomed sense of security.

PHYSIO-THERAPY.

Probably never before has the value of physio-therapy been so generally appreciated. Men well versed in the use of heat, light, baths, massage, and electricity have ably and conclusively demonstrated the invaluable efficacy of these agents when scientifically and persistently employed. Through their untiring zeal and efforts many a joint has been spared disability; many a contracture has been prevented; many a nerve has had its conductivity restored; and many a painful convalescence has been agreeably shortened. No longer can surgeons dismiss as cured fractures whose union is firm and whose soft parts are healed with the complacent remark that only time and use will restore perfect function. Far too often in the past, however, function has never fully returned because the surgeon's interest in the cases ceased with anatomic repair and there was no one to supervise functional convalescence. Perhaps the fault does not lie wholly with the surgeons. Very often patients themselves have been so satisfied with anatomic repair and vague assurances as to the future, that they wilfully or ignorantly forewent prolonged after-treatment. Wounded soldiers, on the other hand, were under orders and, willing or not, had to submit to extended treatment. Doubtless this ability to control patients was a very essential factor in the success of physio-therapy; but lack of this control is not an excuse, but merely an explanation of failures in civil life. And the explanation offers the remedy. Now that surgeons have been brought to appreciate the value and necessity of physio-therapeutic after care, laymen must through a campaign of education be likewise taught not only to recognize the value of such measures but also to demand that they be given the benefit of them.

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EDITORIALS

THE FISKE FUND PRIZE DISSERTATION.

The trustees of the Fiske Fund have departed from their established custom this year and have decided to publish the prize essay of 1920 in the RHODE ISLAND MEDICAL JOURNAL. The entire essay appears in this issue. We feel that the readers of this JOURNAL will welcome the innovation, as it will bring the paper before a larger number of readers than ever before, and in form

that lends itself more easily to absorption. The paper which appears regularly on our desks is more often read than the pamphlet or reprint, which is often misplaced or put aside with the idea that it will be read sometime; and very often the "sometime" never comes.

The essay of this year is a particularly good one. Almost every phase of the medical and surgical problems encountered in the Great War has been adequately covered in a thorough and interesting manner, and we recommend this article to every reader who would understand the lessons brought out in the surgery of the

war. The description of the Carrel-Dakin technic is set forth in a particularly clear and concise manner, and the other topics, while not so exhaustively handled, are written in a comprehensive and entertaining style.

THE DOCTOR'S VACATION.

When viewed narrowly and in terms of the bank account only, the doctor's period of vacation is a most costly affair. Not only does his income cease while he is away but for a long period after his return to his office the break in the routine of his practice is evident to him. Indeed a certain number of his patients abandon him entirely, preferring to rely upon someone who is "always on the job" or who limits his holidays to week-ends near enough to his office to ensure his being easily reached by telephone if needed.

But viewed in broader perspective, nothing is more valuable to the busy practitioner than his days off. With his bridges burned behind him and unharassed by the cruelly insistent clamor of the telephone, he can indulge freely in his favorite recreation, become acquainted with his family and for a short space of time really live. From the point of view of physical well being nothing need be said in defence of vacations. As a relaxation of mental strain they are even more important. The man who cannot afford the time for recreation usually cannot afford the time off for study and must make mere affluent mediocrity his goal. He forgets how to play and that his duty to his family is to enjoy life with them,—to give to them, first of all, the best that is in him, and not merely to earn the money that pays their bills.

The JOURNAL recommends to each of its readers a schedule so arranged that it includes a maximum of ten months of work, with a period of at least one month for study and one month reserved for play.

A NEW JOURNAL OF SURGERY.

The *Archives of Surgery*, the first number of which has just been issued by the American

Medical Association, is similar in character and scope to the *Archives of Internal Medicine*, the *American Journal of Diseases of Children*, the *Archives of Neurology and Psychiatry*,—all publications of the American Medical Association. The latest addition to this list bids fair to continue the high standard set for scientific publications of this character.

The *Archives* will not enter into competition with the two other great journals of surgery in this country, the *Annals of Surgery and Surgery, Gynecology and Obstetrics*. It will aim to be "one of the organs of expression in the growing field of surgical education." It will publish papers which have been read before the surgical section of American Medical Association meetings, especially those of technical interest and of less interest to readers of the *Journal* of the American Medical Association. It will also publish original articles pertaining to research and investigation in those subjects of surgery which lay the foundation for sound surgical progress.

The *Archives* is very attractive in its maiden dress, printing, illustrations, color work and reproductions, all testifying to the high character of its sponsors and their determination to keep the best of American surgery before the medical profession of this country.

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ORIGINAL ARTICLES

THE PRESIDENT'S ANNUAL ADDRESS.*

By JOHN M. PETERS, M. D.,
Providence, R. I.

Fellows of the Rhode Island Medical Society:

In accordance with the By-Laws of the Society requiring the President of the Society to give at the annual meeting an address, I have thought that it might be interesting for me to state in a brief form some of my impressions of the Far Eastern Countries which it was my privilege recently to visit.

I can understand better than ever before the quotation of Kipling that "East is East and West is West". I also realize as never before that the true impression of a people can be gotten only by contact and not by word, written or spoken. It was our good fortune to be closely associated in our travels with a man who had travelled widely for years, who had been in these countries many times and who, in personal and business relationships, had opportunities to come in close contact with people who had lived in the East for many years, such as missionaries, writers, business men, and Government officials.

I return home with a better understanding of the enormous amount of good done in spiritual, physical and material ways by the missionaries. They surely have been and are the leaders in introducing modern ideas of civilization in these countries. The church missionary in doing his daily spiritual work among the masses has had occasion to introduce many of the simple modern comforts of civilization, which the natives by observation and use soon adopted. He has introduced, among the many benefits, the weekly day of rest which is followed to great extent in the cities and larger trading centers, getting for the laborers regular wages with hours for

leisure instead of obtaining food and clothing and mere pittance in the form of gratuity. He has introduced many betterments and improvements in the way of food, which are of great commercial value, and has helped in the establishment of agricultural and semi-agricultural schools, which are slowly improving the methods of farming. These are in most parts of the country carried on by human labor, almost entirely in the same primitive ways that were followed by their forefathers centuries ago.

At a recent dinner given in Peking to John R. Freeman, our neighbor, who is acting as consultant in the tremendous engineering feat of trying to restrain the floods and to revive the industrial and agricultural sections which extend along the grand canal for about one thousand miles into the heart of China, the Director General of this great work said:—"Your Government does not promiscuously lend money to striving factions in the hope of gaining a position of advantage in China, but your people put millions of dollars in educational and missionary enterprises and in the Y. M. C. A., which work for the mental, spiritual and physical benefit of our people and do more to excite the admiration, confidence, and the desire to coöperate with you than any diplomatic policy your Government might pursue".

Ignorance is the cause of many ills and when combined with it are poverty and superstition one can better realize why some of these great Eastern countries are so backward in the way of civilization. We think a few centuries mean antiquity, but in China where they point out to you objects, orders and dynasties of Governments, ten, fifteen and twenty centuries old, one realizes as never before that we are a modern people.

In China, where for many centuries the people have been under the sway and control of Manchus, their labor is represented by the great walls, ancient temples, the wondrous works of art still preserved. There has been a real

*Read before the Rhode Island Medical Society
June 3, 1920.

awakening since it became a republic, eighteen years ago. This great country is still in the throes of political parties, divided generally between North and South China, yet there can be no question but in time with education and the knowledge and power that must come with it, the country will have a great future. The people are industrious and with education will become ambitious. The land is fertile and there are said to be unlimited resources of coal, iron and other minerals, but the whole land is stripped of timber. As a result enormous floods occur almost every year when the snow melts, washing away the fertile soil, and only reforestation on a tremendous scale can prevent it.

Among the earliest medical missions established in China is that at Canton, 110 miles from Hongkong, on the West River, and opened in 1835. We had the privilege of inspecting this plant and of meeting Dr. Thompson, who has been connected with it for forty-four years. Its location near the river and on the edge of the crowded city is unusually good, but the buildings are old without modern conveniences and should be replaced by new ones to be really efficient. We found patients lying on beds built of wood, covered by blankets, in places of springs and mattresses, with buckets under the beds to catch the dejecta as they were passed through the holes in the boards. The operating room equipment was of the most meagre and primitive type, as in fact was the whole plant. It was instructive and interesting, however, to learn of the unusual results obtained, especially in their surgical work. Early in the history of the hospital, they established a reputation for doing unusual work, especially in the removal of bladder and hepatic calculi, and of ovarian tumors. We were astonished to see the tremendous number of stones that had been removed. In 1918 their report shows that seventy-nine suprapubic operations were done for vesical calculi. The reputation of their work has spread to many Provinces far away. We were told of many patients who, before the building of railroads, were brought many miles in palanquin chairs on the backs of coolies for operation. It was virgin soil for modern medical and surgical work, and we as medical men can bear witness to the fruit that it has borne and to the appreciation and gratitude that have

been and are shown to the group of self-sacrificing men and women who have devoted their lives to the work.

What China needs in a medical way, as I saw it from a brief cursory visit, is help in getting a start in educating native men and women in medicine and nursing. The medical missionaries have done and are doing wonderful work, but have merely turned the soil. The country is so large and the population so great—over 400,000,000—that the possibilities of future work have scarcely been touched.

It is recognized and appreciated by many writers on the subject that the medical missionary has had the opportunity to do good in a manner appreciated by the ignorant and superstitious native that the ordinary missionary does not have. I must admit that I was ignorant of their work and somewhat prejudiced against them, but I now realize the importance of the great work that has been done by this brave and unselfish band of volunteer workers.

American funds, the voluntary gifts of our people, have done a wonderful work here as elsewhere in the missionary field, but the acme, the focusing point, will soon be reached when the magnificent, substantial and practical plant now being erected and soon to be opened in Peking as a high grade medical school and hospital by the funds supplied by the Rockefeller Foundation is completed. Here will be found a hospital built on modern lines, complete, fire-proof, convenient for its purposes, simple, without ostentation except so far as the roof lines go, which follow in the material and design of the corresponding roofs of imperial yellow tile. In style of architecture it is similar to those found in the famous Chinese Temples and State Buildings, tactfully copied because of the harmonious setting with the neighboring buildings.

Here will soon be opened a high grade medical school, admitting men and women, who before their admission, must have had an education equivalent to that required by our colleges. For those who have not had quite this degree of education, a group of buildings is given up to pre-medical education in chemistry, biology, physiology, physics, etc. This school is already in operation. The Faculty, in the beginning, will be made up of some of the best medical men, both foreign and native, who have been

in practice and engaged in teaching in other medical schools, supplemented by some newcomers. The teaching will be mostly in English and it is the purpose to start off on a high plane from the beginning with the hope and prospect that the graduates will scatter throughout the country and become centers or focusing points in gradually raising the standard of medicine throughout the country.

I know of no work so well thought out and planned that seems to offer such prospects of doing good directly in a physical and indirectly in spiritual and material ways as this great center of succor, education and civilization. Here will also be taught young native women to become nurses, who are so much needed and who, with their medical sisters, can approach and help the women of the country, especially in the lines of gynecology and obstetrics. Up to now because of tradition and custom it has not been thought proper to employ male physicians. The nurses especially can do an enormous amount of good, not only as nurses but as educators, social service workers, advisors, etc. The need was great, the hour propitious and the ways and means found. The gratitude of the people, who will be benefited more and more as time goes on and as the seed spreads and fructifies, will perhaps not often be put into words, but it will be felt towards him whose generosity has made this great work possible and towards those who have so wisely administered this great fund.

In many of the large cities in China there are parts or sections called Foreign Concessions in which most of the foreigners live and transact their business. The contrast in architecture, construction of buildings, ground space around buildings, cleanliness, etc., between these sections and those occupied by the natives is very striking and impressive. These foreign concessions are generally owned by the Great Powers and the residents, Government officials, business men, etc., try to live in the manner that they did at home with well built buildings exposed to the sun, with ground space for trees, lawns, etc. Until recently the natives were housed in comparatively small buildings with but little space left uncovered by buildings. They are learning, however, and many have bought large tracts of land in the suburbs and

are following the foreign style of buildings with open air or breathing spaces about them.

I have no means of knowing what the death rate in the cities of China is, but my observation would lead me to believe that it must be very high. It is customary there, as in many of the neighboring countries, for young men and women to apprentice themselves for a certain number of years in order to learn a trade or guild, and we were told that the common contract called upon the employer to furnish board and lodging to the apprentices besides the small pittance that was given for clothing, etc. Most of the shops are small, generally connected with the household and store of the owner, and employing six or a dozen men, women, boys or girls. Large factories, such as we know, are very few in number and are generally limited to cotton piece goods, large iron works and ship yards. In looking into some of these small shops to see their methods of producing different works of art, we would come across the living quarters of the small number of men and boys, who constituted the force of workers, squatting on their haunches in what to us were most uncomfortable positions. They naturally assumed these positions, straining their eyes to do in very poor light the delicate work in which they were engaged, and dressed in winter street clothes, in rooms which were uncomfortably cold to us, and in which the only heat was that obtained from charcoal braziers.

We were not surprised to be told that the death rate from tuberculosis in both China and Japan was very high when we realized under what conditions the people, especially in the cities, lived. The houses in China are generally built of adobe, stone or brick, have no cellars, few windows, stone or dirt floors, heated generally by charcoal braziers, and are often overcrowded. The houses are built so closely together that but little sunlight can reach their interiors, and the people in the cities are rarely in the sunlight except when on the streets. In the old sections these are rarely wide enough to allow a carriage to be driven. We found the streets in most places remarkably well kept as to cleanliness, but built mostly of soft stone or dirt, which soon becomes dust. The householder is by law obliged to wet the streets down several times a day, using the water in which

his rice is boiled, and scattered by dippers, generally in the hands of the women or children. In rainy weather the streets are simply pools of slimy mud. At other times the winds cause the dust storms which are so prevalent and disagreeable, especially in Peking.

In Canton many streets are but alleys, five to eight feet wide, filled with throngs of people on foot with a few in palanquin or sedan chairs carried on the shoulders of two or four men, with crowds of men, women, and children carrying baskets, bundles, and boxes on poles balanced on their shoulders, pressing their way through the multitude of people and giving warning cries. Both sides of these alley-ways are lined with little retail shops, open full width, and with small manufacturing plants where are made in full view to those on the street everything from tooth picks to coffins. I never saw such a congestion of people, never heard such continuous cries of warning, and never smelt such odors.

To one who is accustomed in his work to seeing evidences of poverty in a public institution, the shock to his senses must be less than to most people, but I must confess that several meals taken in Canton did not appeal especially to me after traversing some of the streets or alleys for several hours and seeing the many evidences of disease and filth.

In the city of Canton many thousand families live on small boats or sandpans, some as small as six by fifteen feet, many of which have no permanent anchorage but which are poled from place to place by the mother and children while the father is at work on other boats or on land. In these small boats they are born, live and die, and are looked down upon as outcasts by their brothers ashore. The children are uneducated and as they grow up, follow in the lines of their parents and generally marry among their own class. We took much interest in watching their simple methods of living. Their food, mostly rice and fish, is cooked on charcoal braziers; their almost universal drink is tea made from the river water on which their own and many thousands of other boats float and into which runs the sewerage of the city, as well as receiving over-board their own dejections and those of thousands of others living on similar boats. We found here that many demands of nature

are considered functional and necessary and therefore are often, as a matter of course, performed in full view of the public.

In these countries, closely inhabited for centuries, in which the people because of necessity, live largely on grain and vegetables, the matter of fertilization becomes very important, and they have found it necessary to save and utilize all dejections, human and animal, for this purpose. It was rather discomforting in the beginning, until we got accustomed to it, to meet in the narrow streets or alleys, men pushing huge wheel-barrows piled with buckets, sometimes covered and again not, containing human discharges, which we were told were almost the only fertilizers used because of the scarcity of animals, (whose droppings on the streets are collected by men, women and children in districts restricted by law and for which privilege money is paid), and because of the high cost of commercial fertilizers. It rather startled us to see in one of the ports, women in small boats collecting with fine meshed nets on the end of long poles, the solid contents discharging from the toilet pipes on the side of the boats and depositing them in buckets which were later taken to cesspools in the fields, from which they were at the proper season taken and spread on the fields or gardens. After witnessing these methods we could better understand why foreigners rarely ate lettuce, celery and other similarly grown, uncooked vegetables. We found them also collecting by the same use of nets the refuse from the kitchens and dining rooms of the ships, as they were washed out of the discharge pipes.

Poverty, filth, long hours when employed, evidences of sickness and malformation, poor housing, lack of comforts and conveniences, oppression by those in political power, no outlook for the future until recently, the absence of sanitary measures, the dull apathetic look of the average Chinaman, are some of the strong impressions I got from my visit to China.

The contrast to the average tourist in the impressions made on him by visiting Japan after visiting China is very striking. In Japan we found mountains, hills and valleys, in place of the flat plains through which we traveled in China for 2000 miles. In Japan the hills and mountain sides, where it is not practicable to

raise cereals, vegetables or fruit, are covered by trees of all sorts and sizes because of the wise governmental requirement in use for years for the reforestation of all areas that have been found unsuitable for raising cereals, vegetables, etc.

In China the absence of trees, in that part of the country in which we traveled, was impressive and depressing. Rarely did we find any number of them or of any size, as we traveled across the country.

In Japan we found many people, especially in the interior of the country, smiling and apparently happy and contented and often dressed in bright colors, especially the children. In China we found the people stolid, with set sober faces, and their dress sombre and but rarely showing bright colors. In Japan there are many evidences of prosperity, but in China many of evidences of poverty unashamedly shown. In Japan cleanliness of body and home; in China dirt and filth; in Japan alertness, inquisitiveness, forwardness or boldness; in China apathy and dullness caused by oppression; in Japan compulsory education; in China very limited facilities for the deucation of the poor; in Japan many articles well finished and of attractive appearance but poorly made and trashy; in China evidences of articles well made, and lasting; in Japan many evidences of copying, of imitating, of utilizing the original ideas of others. Because of the absence of patent or copyright laws in that country, the design of the original is frankly copied, but turned out at a much less cost because of poor workmanship and material, underselling the original and often, we were told, being the same name and trademark of the original. In China every evidence of originality, of creativeness and of honest work; in Japan, some wonderful works of art, especially in the line of old bronzes, pottery and lacquer work, more articles of antique Chinese art than can be found in China; in China comparatively few of her best works of art, which are acknowledged to have been in their line the most wonderful ever produced, because of their sale or loss to other countries. In Japan the feeling of most foreigners is that a contract must be definite and binding; in China, those who know by personal or business relations, depend on the Chinaman's word,

which is considered as good as his bond. In Japan the utilization of everything on land, as the growth of timber, of vegetables and fruit life, of the use of water for generating electric power and later for irrigating their thousands of fields, producing to a large extent the food needed by this constantly and rapidly growing people, the development of her mines of coal and iron but which, especially the latter, produce only a limited amount and of poor quality, and the great dependence on fish and rice as food. In China, waste by floods because of the lack of trees to hold back the waters coming from the melting snows, the lack of timber, the non-development or full utilization of her enormous deposits of iron and coal, the slow development of the use of steam railroads because of superstition, and because of their unwillingness to allow these roads to be built across the burial lots of their ancestors whom they worship for many successive generations. These burial lots are generally located on their home plats and in many sections of the country occupy, because of this long custom of the country, many large areas which are not disturbed.

We were told that, before the beginning of the Great War, Japan was still struggling with the enormous debt incurred by her great war with Russia, but surely now there is every evidence of prosperity. Probably no country, except possibly our own, received more monetary benefit and business stimulus during this period than has Japan. We were told many times, and saw many evidences, that the newly made rich were squandering their money and that the masses were getting rid of theirs as with us. The time of reaction had already come when we were there, and there were many evidences of financial weakness and panic as shown by the closing of stock, rice and silk exchanges, the dropping of prices of necessities, the cutting of wages, the calling of strikes, direct and sympathetic, the discharge of thousands as in cotton mills, and ship yards, the occurrence of paid riots due to increase of 300% to 400% in the price of their food—rice—due largely, we were told, to the manipulation in prices by speculators. Japan has already begun to face what we shall probably have to face, a changed and falling financial business and employment situation. China, because of lack of organiza-

tion, of shipping, of money, or large industrial plants, benefited but little, in comparison with Japan, by the demands of her supplies made by the countries engaged in the Great War.

In Japan loyalty to the Government, recognition of discipline by family and guild; in China, chaos in government due to fight for power between North and South China, lack of finances due to corruption of the old regime of government, and to lack of ambition and unity.

At Manila we found the General Hospital, established and maintained by the Government, very well designed and constructed. Originally, I was told, it was staffed mostly by medical men of our army and navy, but now practically the whole staff is made up of trained Filipinos. The school for nurses, established under the direction of American trained nurses, was very successful, and had graduated many nurses who had taken up the work of establishing or bettering institutions in other parts of the islands. The whole place impressed me, in my cursory visit, very favorably, not only in the arrangement and construction of buildings, but in its upkeep and general order of cleanliness. As it is practically under the control of the medical school, it is doing good educational work in bringing the students in close touch with modern ideas of construction and sanitation which are bound in time to have a leavening effect in raising the standards of hospitals throughout the country.

I think our country can well be proud of what it has done along the lines of health and sanitation, as evidenced not only by this hospital and medical school, but by the establishment of modern water-works, sewer systems, well constructed and cleanly kept streets, the control of zymotic diseases, etc.

In closing these rambling remarks of a casual observer, I wish to state that in my opinion no American ought ever, after visiting these countries, to be tempted to complain of hardships and restraints, and ought always to be thankful for the liberties, the privileges, the opportunities, that are his right at home.

TREATMENT OF SYPHILIS.*

By HILARY J. CONNOR, M. D.,
Providence, R. I.

The treatment of syphilis to-day is apparently fairly satisfactory, but time alone will definitely prove whether or not it is adequate.

The greatest proof we have that a disease like syphilis is cured is not by absence of symptoms and negative examination following treatment but by absence of symptoms and negative examination many years after treatment. Even then the patient may show no signs during life, but evidence of latent syphilis may be found at autopsy. However, from a practical point of view, if the patient shows no signs during life we may consider him cured.

With this idea in view, last year we endeavored to examine the patients that were treated for syphilis at the Providence City Hospital in 1914. Out of 206 patients treated that year we were able to examine 37 in 1919,—that is, five years after receiving treatment.

33 patients showed a negative examination and negative Wasserman.

4 patients had symptoms or a positive Wasserman.

The 37 patients were divided into 22 primary, 5 secondary, 1 tertiary, 1 congenital, and 8 cases where no diagnosis was given on the record. All had a positive Wasserman or a positive smear for spirochaetes on admittance.

TWENTY-TWO PRIMARY CASES.

Twenty were found negative and two positive. The negative cases received an average of four intravenous treatments of neosalvarsan .9 gram at weekly intervals, no case receiving less than three and none over six treatments.

Only three of the cases received mercury. The two positive cases each received two treatments of neo-salvarsan .9 grams at weekly intervals but no mercury. One patient had developed tabes dorsalis; the other cerebral lues.

FIVE SECONDARY CASES.

Four were found negative and one positive. The four negative cases each received three treatments of .9 gram of neosalvarsan but no mercury. The positive case received one intra-

* Read before the Providence Medical Association, June 7, 1920.

venous treatment of salvarsan .6 gram and no mercury.

The tertiary case was negative. This case received three intravenous treatments of neosalvarsan .9 gram but no mercury.

The one congenital case received four intravenous treatments of neosalvarsan .9 gram and no mercury.

Of the cases with no diagnosis on the record, seven were found negative and one positive. The negative cases received an average of four intravenous treatments of neosalvarsan, none less than 3. No mercury was used.

The positive case is still under treatment with a ++++ Wasserman and symptoms. This patient received three intravenous treatments of neosalvarsan of .9 gram during the first year.

Very little mercury was given in any form in 1914. The form used was protoiodide tablets and inunctions .9 gram neosalvarsan were given beginning with the first treatment. No ill effects were observed. Many physicians hesitate to use a large dose of arsphenamine or neoarsphenamine at the first treatment.

The small number of treatments given—usually three—gave surprisingly good results.

SUMMARY.

Out of 37 patients examined five years after treatment, 33 were found negative, or nearly 90 per cent. The 33 negative cases all received three or more intravenous treatments of neosalvarsan .9 gram, and three of these patients were given protoiodide and inunctions of mercury.

Four of the patients examined were found positive.

One primary case received two intravenous treatments of neosalvarsan .9 gram and developed tabes dorsalis. Another primary case received two intravenous treatments of neosalvarsan .9 gram and developed cerebral syphilis.

One secondary case received one injection of salvarsan .6 gram during the first year. The patient is now under treatment with a ++++ Wasserman and positive symptoms. Another patient with no diagnosis as to stage, receiving three intravenous treatments of neosalvarsan .9 gram first year, is now under treatment with ++++ Wasserman and symptoms.

In treating syphilis it is impossible to follow any exact method of treatment for all cases. At the Providence City Hospital we have a routine

method of treatment with which we obtain good clinical results in many cases, but other cases do not respond to this method and are treated according to indications.

Thus a patient developing eye symptoms or meningeal involvement receives more intensive treatment than the ordinary case.

Ordinarily we give six or eight intravenous treatments on admittance, two treatments a week; then eight injections of gray oil grains ii at weekly intervals, or two months of rubbing with mercurial ointment 50%. The Wasserman is taken after each series. If negative after the course of mercury and there are no symptoms, we continue mercurial treatment for two months, and then if there is no contraindication, the patient is given one month's rest. The patient is given more arsphenamine and mercury till he or she has had at least eighteen arsphenamine treatments. Treatment is extended over three years if possible. Potassium iodide is given when considered necessary.

In regard to mercury, I consider that there is only one proper method of using mercury, and that is by the ointment. Ointment 50% may be prescribed in papers, dosage 1 or 2 drams, to be rubbed in, in the usual manner.

Calomel ointment has been advocated to take the place of blue ointment on account of its appearance, but although I have had very little personal experience with it, it is regarded by the leading syphiliographers of the country as practically useless.

Mercury by mouth and the injections of mercury, of which I used gray oil and mercurial salicylate, are of less value than the ointment. I have seen many symptoms following the use of mercury salicylate which I could not account for in any way than due to the drug itself. Clinical results have been poor following its use. I have not used gray oil as long, but it is evidently inferior to the ointment.

Potassium iodide is used according to indications. We have no routine treatment. The patient is started in on 30 drops three times a day, and dosage may be increased if desired. We have seen very few patients with idiosyncrasy to potassium iodide.

Of the three forms of treatment—arsphenamine, mercury and potassium iodide—arsphenamine is now recognized by all clinicians throughout the country as the most important.

In my opinion neosalvarsan is the best preparation for general use. In regard to safety, I have only seen a few slight reactions following its use,—never a severe one. It is very easily prepared and may be given in more concentrated solution than other preparations. This is convenient in office practice if using a syringe. According to Kolmer of Philadelphia, a concentrated solution is less apt to give a reaction than a diluted solution. Thus a dose of .9 gram in 20 c. c. or 25 c. c. of distilled water may easily be given by the syringe method. The solution should be given slowly. Schamberg says: "Neosalvarsan should never be administered if the solution is not brilliantly clear, for a cloudy solution will produce immediate reaction with syncope (in the rare case fatal) as the dominant symptom. If filtering does not completely clear the solution it should be discarded." I have never seen a solution of this description. Diarsenol, salvarsan and arzenobenzol require much more care in preparing and are of no more value. It is sometimes difficult to secure the proper alkalinity of your solution, even when you count the drops. If not enough sodium hydroxide is used you are apt to have a reaction, but if too much is used you may cause thrombosis of a vein, which is painful to the patient and ruins the vein for further injections. Neo-diarsenol has not given as good results as other preparations.

Reactions are usually due to insufficient alkalinity of solution. Many cases are due to a susceptibility toward arsphenamine which the patient acquires after receiving a certain number of treatments.

This may be avoided in several ways:

- (1) Stop the intravenous treatment for a month or longer.
- (2) Atropine grains 1/50 subcutaneously given fifteen minutes before treatment will usually prevent a reaction.
- (3) .05 gram of the arsphenamine dissolved in 5 c. c. distilled water may be given one hour before injections of full dose and reaction prevented.

There is another class of cases which is intolerant to arsphenamine from the beginning and should be treated with great caution.

It has been stated that an individual who is susceptible to one form of arsphenamine may tolerate another form. For example, a patient

developing dermatitis following salvarsan treatment might tolerate neosalvarsan. However, in a similar case it would be safer to drop the arsphenamine entirely and use mercury.

A FEW PRACTICAL HELPS IN ADMINISTERING ARSPHENAMINE WITH GRAVITY APPARATUS.

A patient in rolling up his sleeve above the elbow, especially in winter, when heavier underwear is used, often forms a tourniquet of his own, interfering with the flow of the solution. Also, with the sleeve rolled up the patient may hold his arm close to the side of the body so that even though there is no constricting band, the pressure of the rolled up sleeve against the axilla interferes with the flow.

A good method of introducing the needle into the vein is to place the ball of the thumb of the left hand over the vein one-half inch below the site of the desired injection. With firm pressure applied here you are able to prevent the vein from slipping away from the point of the needle. It is well to carry the needle well up into the vein one-half inch or more. If the needle may be moved freely up and down with no obstruction and blood still flows, there is little danger of introducing the solution into the sheath of the vein as occasionally happens. Also, if the patient moves or the needle is accidentally moved it is not apt to be dislodged.

It is advisable not to have any bubbles of air in the tube, but do not be alarmed if a few bubbles enter a vein, as there is practically no danger.

A FEW WORDS ABOUT GENITAL SORES.

Any suspicious looking sore on the penis appearing from two to eight weeks after extramarital intercourse should be given an intravenous treatment immediately. We are told that the leading clinicians of the country are able to demonstrate the treponema pallidum by smear from lesion in 90 per cent. of cases, using the dark field apparatus.

Why should the other 10 per cent. of cases wait for a positive Wasserman or secondary symptoms? In a great majority of cases the dark field apparatus is not available and the physician waits for a positive Wasserman.

The principal objection which could be raised to immediate treatment without positive diagno-

sis is that the patient being treated may never develop a positive Wasserman and never know whether he really had syphilis or not. Now this to my mind is less serious than waiting till the disease has a firm hold on the individual before giving treatment. I firmly believe if a patient appears soon after a chancre has developed and before the Wasserman is positive, he should receive six intravenous treatments of arsphenamine or neo-arsphenamine. With two treatments a week he would be absolutely cured in 99 per cent. of cases.

The whole subject should be explained to the patient and the advantage of early treatment urged, even though treatment may be needless. If the patient desires to wait for more evident proof, he is responsible.

The Wasserman test should be made during the course of the treatment, and if the blood is found positive, an extended course of treatment should be given, even though it may be unnecessary. If the Wasserman test is not found positive, then advise the patient to have the blood tested six months after receiving six treatments of arsphenamine.

DISCUSSION OF DR. CONNOR'S PAPER.

DR. WALTER M. BRUNET, New York, N. Y.—I am not going to read a paper, I am going to talk a few minutes upon syphilis before showing the films. We see so many cases in our daily rounds that can be directly traced to syphilis in the individual or parent that it always keeps us on the job in regard to this disease.

The idea of presenting these films is to place before the entire medical fraternity just what is being done with moving pictures in the diagnosis and treatment of syphilis. We are putting the lesson to the eye and not to the ear. We get things in one ear and they go out of the other but you have never heard of anyone receiving a lesson in one eye and its going out of the other. We remember much more of what we see than of what we hear. These films were not made for specialists but rather for the general practitioner. We do want to have the frank expression of the specialists and suggestions from all how these films can be improved.

For the doctor who is interested in syphilis and does not know how to treat same and would like to treat it, we want to show him in these

pictures the latest methods now in use. If you have a desire to treat these cases yourself, it is easily learned and it offers no great difficulty. If you do not care to treat these cases, send them to a specialist so that they can receive expert care and advice.

The State Board of Health of North Carolina has purchased these films and is sending a specialist through each county to show them to groups of medical men. It has aroused the doctors' interest in the subject of syphilis and we feel certain that they are getting and will continue to get wonderful results in such an educational campaign.

From a number of physicians word has been received that more chronic cases are being diagnosed and treated than ever before. Also, many cases of neurosyphilis are being diagnosed and treated, due to the increased interest being taken in this disease. If you are seeing more old chronic cases we should like to know what such an increase is due to. Is it due to the educational work done during the war, or increase in earning capacity of the populace in general, or to the wide publicity which has been given to venereal diseases by national, state, and voluntary organizations, or is it an epoch in the history of any disease that we find in the progress of the race?

These films are then shown you for your constructive criticisms, for your suggestions and for any help you can give us to put the subject of syphilis in a plain simple manner to the medical profession.

Dr. Brunet, in closing, said: I want to emphasize one point in Dr. Sawyer's remarks which you brought out in the treatment of primary sores with mercurials.

If the chancre has been treated with calomel or blue ointment, etc., it will be impossible to find the spirochaete in the serum expressed from same. However, in those cases you will find that if there are enlarged inguinal glands you can find the spirochaete in them. Locate the gland and inject 1 c. c. of saline and manipulate the needle and withdraw the fluid and examine under the dark field microscope. The spirochaete can usually be found after this procedure.

A good many doctors are reporting reactions from administration of salvarsan. These reactions occur from several causes, such as too

large a dose of the drug being administered or from some chemical which is used in the manufacture of the rubber tubing or from old distilled water and from improper neutralization.

Several years ago I had some annoying experience in administering salvarsan in seven cases. Five had severe reactions due to the use of new rubber tubing, two cases had severe headache from twelve to eighteen hours.

I was in Johns Hopkins Hospital, Syphilis Clinic, a few weeks ago and I found that they were giving small doses of salvarsan .3 or .4 gms., and they have few if any reactions.

DR. CARL D. SAWYER, Providence, R. I.—There are a great many things that could be said, but first I should say a word about the pictures. It is a wonderful series. I do not know of anything more plain, clear or interesting. It seems to me that they should accomplish a great deal. I think that these pictures are doing a great deal to prevent syphilis. It does seem as if there were fewer cases appearing.

Regarding the primary cases, I am sure that I have seen fewer cases in the last three or four years. I think one reason is because education has had a great deal to do with it. In the clinics we are not seeing as many cases as we did. Some of these primary cases have been seen by the private physician rather than in the clinic. Another reason is that during the war many of the men, from 18 to 30 years of age, at which time syphilis is generally contracted, have been in the army where they have had the benefit of instruction on hygiene and have been warned and cautioned. That is another reason why we have not seen so many.

A great many individuals who have these early sores are, I fear, possibly neglected. I don't want to say that in the way of criticising the medical profession, for the individual himself does not always attend to them. These patients have a sore and approach a physician and he will put on calomel or some caustic and let him go and tell him that he will be all right. I say that because I have recently seen two cases where that has been done, and calomel or some mercurial preparation was used. The patients were allowed to go and after a few days they were sent for an examination. It is almost impossible to find spirochetes after the

sore has been thus treated. Saline will not do any harm but keep caustics and mercurials off and send the individual where there is a dark field illuminator.

Probably three to four months treatment in the early stages will cure practically every case, but when you have reached the secondary stage, it requires two or three years treatment and the individual is spending a great deal of money. As regards the present method of treatment, the method of treatment has changed a great deal from what it was ten years ago. We were taught that one dose of salvarsan was a cure. From that it has gone along to the stage where we give up to seventy doses. We certainly know that one or two doses does not cure in the average case. Probably a good method to follow is a series of five or six salvarsan treatments and then give a course of mercury by inunctions or injections. If the patient is in the secondary stage, give the salvarsan at least twice a week or even three times. I have done this in a number of cases in the early stages for a period of two weeks. I believe in hitting hard in the beginning if you wish to accomplish results. As to the methods of mercurial treatment, I agree largely with Dr. Connor. There was a time when I thought there was nothing like injections, but now I largely favor the inunctions, but many patients will not follow out that method and they do not like to sit down and rub for fifteen or twenty minutes. Of the preparations for injecting, if you wish quick results, you may give a soluble salt of mercury, but for routine treatment I like gray oil. Personally I do not care for salicylate.

I think that Dr. Connor's paper was very good. It showed that in the series, twenty-two cases, receiving an average of four doses of salvarsan, were cured in five years. That brings me back to the point that I made a few minutes ago. The primary or early secondary stage is the time in which to cure syphilis. I believe that those cases can be cured.

DR. HENRY MCCUSKER, Providence, R. I.—At Butler Hospital our work on syphilis is confined, as you know, to the neurosyphilitic group. In the treatment of neurosyphilis several methods have been tried. At first we used the intravenous alone. Then the intraspinal of the Swift-Ellis method came into use. Later on an

effort was made to get the drug nearer to the seat of the disease and the intraventricular method was tried. At present we are working out a new method of treatment known as the intracistern injection of salvarsanized serum. In so far as I know, outside of Ayer at the Massachusetts General Hospital and our work at Butler Hospital, the intracistern method is not being used elsewhere.

The serum used in the intracistern method is prepared in the same way as the serum used in the intraspinal method. The patient is placed on his side and in such a position that the occipital protuberance and the spine of the vertebrae are on the same horizontal plane. The patient's head is then flexed on his chest. The needle used is an ordinary eighteen gauge lumbar puncture needle, graduated in centimetres. With the thumb of the left hand the occipital protuberance is located. Below this and in the median line a depression may be felt which is the space bounded above by the lower border of the base of the skull, below by the upper border of the first cervical vertebra, and laterally by the superior nuchal lines. The needle is inserted into the center of this area just above the spine of the axis and in the median line so that it passes through the space between the base of the skull and the spine of the axis. The direction of the needle is slightly upward and in the line of the plane passing through the external auditory meatus and the glabella. When the needle passes through the occipital atlantoid ligament and the dura, the resistance can be felt to have been overcome as in a lumbar puncture. With the needle inserted to a depth of 3.5 cm.—5 cm., cistern fluid may be obtained. After estimating the pressure the salvarsanized serum is then injected slowly.

Cistern puncture is not a difficult operation but it must be done with extreme caution because the medulla lies only 1.5 cm. away from the point of the needle, and, again, the danger of sepsis must not be forgotten but must be rigidly guarded against. To date we have performed about twenty-five cistern punctures and have observed no ill after-effects. At Butler Hospital we have, at present, four cases of neurosyphilis under cistern treatment. Of course this is too small a series from which to draw definite conclusions but I might say, first,

that cistern puncture offers a new method of approach in the treatment of neurosyphilis. Second, that in the hands of one skilled in the technique of lumbar punctures, it is not difficult. Third, that it offers obvious advantages over other methods.

DR. CHARLES A. McDONALD, Providence, R. I.—I recall that not long ago there came from Butler Hospital a paper stating that the intraspinal method of treatment was to solve the problem of neuro-syphilis. I am glad to hear to-night from the staff of this hospital the frank statement that the end results did not justify the promise. As to the work in syphilis at the City Hospital we ought to feel proud, for it is conducting its clinic not only in a thorough way but also by a definite following up of patients and we anticipate much more information of value from this clinic.

Dr. Sawyer spoke of the intensive plan of treatment. In my work on neuro-syphilis I believe that the intensive plan of intravenous injections every other day or smaller doses every few hours has a place, but ought to be used with great precautions. I have known of several catastrophes. In private practice at least in using the intensive plan of treatment I believe it would be safer to know the arsenic carrying power of the individual.

DR. J. EDWARDS KERNEY, Providence, R. I.—In regard to the films, I think the showing of the films is one of the best methods we have of showing up these conditions, and I hope later, through the United States Public Health Service, to have additional films to show before the Society to bring out new points.

There were two or three important points that were not brought out in the discussion, one of the most important of which is the matter of mixing up of the solution of arsphenamine. It has always been a question as to just what point one should stop adding the alkali. If the addition of the alkali is stopped just as the solution clears, there is formed a mono-sodium salt and with this there is an increased tendency to form precipitates, and at which stage the solution is dangerous and has a greater tendency to form reactions. The addition of the alkali should be carried beyond this stage until the disodium salt is formed and it is this solution of

(Continued on Page XIV)

RHODE ISLAND MEDICAL SOCIETY
TREASURER'S REPORT

Rhode Island Medical Society in Account with H. J. Hoye, Treasurer

Interest on Bonds	\$ 72.00	Balance on Hand Jan. 1, 1919	\$1307.57
Collations.	444.00	Annual Dues	3612.50
Printing	90.75	Donations	172.60
Expenses of Secretary	100.62	Ely Fund, Interest on Bonds	74.00
Insurance	16.00	Interest on Daily Balance	47.75
Meeting Expenses	29.33		
Librarian	875.00		
Supplies and Expenses of Library	78.10		
Janitor	390.00		
Expenses of Janitor	50.69		
Light	54.46		
Telephone	59.17		
Fuel	400.79		
Water	9.97		
Sundries	9.25		
Journals (Ely Fund)	73.65		
Cancellation of Bonds	300.00		
Transfer to Endowment Fund			
Interest on Liberty Bonds	12.50		
	<u>\$3066.28</u>		
Cash on Hand to Balance	<u>2148.14</u>		
	<u><u>\$5214.42</u></u>		

Examined and found correct

May 19, 1920

George H. Crooker

1920	1919
Jan. 1 Chase Wiggin Fund To Loan Building Committee	<u>\$6892.21</u>
	<u>\$6892.21</u>
1920	1919
Jan. 1 H. G. Miller Fund To Loan R. I. Medical Society	<u>\$5359.10</u>
Rent H. G. Miller Room	250.00
	<u>\$5609.10</u>
1920	1919
Jan. 1 J. W. C. Ely Fund 1 Bond So. California Edison Co.	<u>\$980.00</u>
8 Shares Mechanics Nat. Bank Stock	480.00
Paid R. I. Med. Soc (for Journals)	74.00
	<u>\$1534.00</u>
1920	1919
Jan. 1 Endowment Fund Cash on Hand	<u>\$1909.40</u>
Liberty Bonds 3½%	350.00
	<u>\$2259.40</u>
1920	1919
Jan. 1 Printing Fund To Loan R. I. Medical Society	<u>\$1677.52</u>
	<u>\$1677.52</u>
1920	1919
Jan. 1 Sinking Fund Cash on Hand	<u>\$1472.06</u>
To Loan R. I. Medical Society	1427.67
	<u>\$2899.73</u>

Examined and found correct

May 19, 1920

George H. Crooker
Auditor

THE RHODE ISLAND MEDICAL JOURNAL

Owned and Published by the Rhode Island Medical Society

Issued Monthly under the direction of the Publication Committee

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RHODE ISLAND MEDICAL SOCIETY

Meets the first Thursday in September, December, March and June

JESSE E. MOWRY	<i>President</i>	Providence
HERBERT TERRY	<i>1st Vice-President</i>	Providence
GEORGE S. MATHEWS	<i>2d Vice-President</i>	Providence
JAMES W. LEECH	<i>Secretary</i>	Providence
HENRY J. HOYE	<i>Treasurer</i>	Providence

DISTRICT SOCIETIES

KENT		
Meets the second Thursday in each month		
FRANK B. SMITH	<i>President</i>	Washington
J. F. ARCHAMBAULT	<i>Secretary</i>	Arctic
NEWPORT		
Meets the third Thursday in each month		
A. F. SQUIRE	<i>President</i>	Newport
A. CHACE SANFORD	<i>Secretary</i>	Newport

R. I. Ophthalmological and Otological Society—2d Thursday—October, December, February, April and Annual at call of President Dr. Frank J. McCabe, President; Dr. C. J. Astle, Secretary-Treasurer.

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WASHINGTON

Meets the second Thursday in January, April, July and October

PATRICK J. MANNING *President* Wickford
W. A. HILLARD *Secretary* Westerly

WOONSOCKET

Meets the second Thursday in each month excepting July and August

ROBERT G. REED *President* Woonsocket
THOMAS F. BAXTER *Secretary* Woonsocket

EDITORIALS

DEFECTS IN MEDICAL SOCIETIES.

That there is a lamentable lack of interest in medical societies on the part of the profession is evident to those who are accustomed to attend these gatherings, and unfortunately the degree of interest in medical meetings is in inverse ratio to the age of the members. One cannot help but be struck by the fact that the attendance at our medical society meetings—district and State—is composed of about the same men, meeting after meeting, and that they

largely comprise the older men. Are our medical societies failing in their mission? As measured by this test, it must be granted that they are falling short of their opportunities, the chief one of which as it appears in the constitution of practically every medical society is to stimulate interest in medical affairs and to induce reputable members of the medical profession to join.

Why this failure? One reason was presented by us in these pages last month—the failure to appoint young men to committees. This is undoubtedly a bad policy to follow, as it removes

from the young men the incentive to take an active part in society affairs and fails to provide successors to the older office-holders on the latter's retirement. This feature can be avoided by the appointment of men to serve on committees for terms of one to three or five years.

Another reason for failure to interest young men has also been touched upon in these columns—namely, the bad practice of late years of "importing" talent for our meetings. The inevitable result of this policy is to stifle discussion which is often the best part of a paper and to transmute the society to the level of a medical school class listening to a didactic lecture.

The obverse of the fore-going somewhat gloomy picture was furnished as recently when we had an opportunity to attend a quarterly meeting of one of the district societies in a distant part of the State. Here the members had come to attend a meeting by driving from five to twenty-five miles and the discussion of the paper was entered into by more than half of the members present. It was a tonic for us and renewed our faith in the possibilities of the medical society having a message for the profession, particularly if some of the more obvious faults in medical organizations can be eliminated.

A MENTAL CLINIC IN OUR COURTS.

It has been obvious for some time to those interested in social welfare that Providence stands in definite need of more modern methods as applied to the workings of the District and Juvenile Courts. No one who has dealt with the human material that daily passes through our courts and enters the corrective institutions can fail to realize the great opportunity for the betterment of our civic life that is being neglected by the medical profession and the courts of law. Already most of the large cities of this country and many of the smaller ones have effected a much needed reform in the establishment of mental clinics in connection with the courts. At the present time the Juvenile Courts do not even make full use of the medical records compiled by school physicians among whom is a trained psychiatrist, although many of the boys and girls appearing in the special courts have had a mental examination made on account of defects and delinquencies previously shown in

the school work. A qualified psychiatrist should see all juvenile cases and most of those in the district courts; certainly all of those exhibiting social misdemeanors.

The need of this can no longer be denied by anyone interested in the rational solution of the problems of the court. A court psychiatrist will be of the greatest aid to the representatives of the law, will solve many a family problem, will make more intelligent the care of cases intrusted to the corrective institutions, will send many individuals with a diseased nervous system to a hospital instead of a jail or reform school, and will compile valuable data that will serve as a guide for future action of the courts, and will lessen the amount of social maladjustment to a great degree.

The time has come when the medical profession should unite to bring about a closer coöperation between physicians and the courts in the problem of dealing with the abnormal individual. The evident mode of procedure is to point out to the public and especially to our legislators the very great need of a mental clinic directed by a competent psychiatrist in connection with our courts.

SPIRITISM.

In these days when eminent scientists are demonstrating to myriad believers that communication with the dead is an established fact and the ouija board devotees are solving the riddles of life by means of their wonderful three-legged phenomenon, it behooves us to stop a moment to find out what it is all about. Is the present wave of occultism that is sweeping over the land merely a manifestation of a nervously depleted world that is trying to forget the tremendous struggle of the war? It is undoubtedly true that much of the impetus that the movement obtained came because the nervous systems of all had been so stimulated that the individuals were ready for the reception of the belief that those who have gone before can still communicate with those remaining. Have the eminent scientists proven by their investigations that this communication is a scientific fact? Certainly the names of Sir Oliver Lodge and Sir Conan Doyle have given the movement great prestige, but it does not impress an impartial observer that they have used the same methods

as they used in the investigations that made their names preeminent. Particularly with Sir Oliver Lodge it seems as if the wish was father to the thought, or rather that he takes the belief as the true belief and then shows how all the evidence can be made compatible with that belief. If this method had been used in his physics laboratory, the name of Sir Oliver Lodge would not carry the respect that is connected with it now.

Is there not a lesson here for the medical profession? Is it not true that we as a profession have failed to realize that there are certain disturbances of the human mind and body that are not amenable to strictly medical treatment? This failure to appreciate the important place that the mind—both mental and psychic—occupies in disease has led to the success of many of the drugless cults and undoubtedly has been a factor in the present belief in spiritism and occultism.

SOCIETY MEETINGS

June 3, 1920.

ANNUAL MEETING.

RHODE ISLAND MEDICAL SOCIETY.

The annual meeting was held June 3rd, 1920, at the Medical Library Building, President Dr. John M. Peters in the chair.

The minutes of the annual meeting of the Council and of the House of Delegates were read by the secretary.

The Chair recognized and introduced as Delegates from the Massachusetts Medical Society, Drs. Wallace C. Keith, Brockton, Mass., and Arthur L. Beals, Brockton, Mass., who extended the greetings of their Society to the Fellows.

Dr. Halsey De Wolf, secretary of the Fiske Fund, announced that the best essay on the subject "Surgical Lessons from the Great War," had been presented by Dr. Allen G. Rice, Springfield, Mass., and that to him had been awarded the prize of \$200. He further announced as the subject for essay under the Fiske Fund for the year 1920-1921, "Compulsory Health Insurance."

Dr. Simon Flexner, director of the Rockefeller Institute for Medical Research, addressed the Society on the subject of "Lethargic En-

cephalitis," and illustrated his address by cases and pathological specimens.

The annual address of the president was read by Dr. John M. Peters.

The newly elected president, Dr. Jesse E. Mowry, Providence, was inducted into office and adjournment was followed by the annual dinner at the Turks Head Club, at which Dr. George W. VanBenschoten acted as anniversary chairman. After dinner speeches were made by Major Judson Hannigan, Beverly, Mass., and George T. Marsh, Providence.

J. W. LEECH, M. D., *Secretary.*

May 3, 1920.

PROVIDENCE MEDICAL ASSOCIATION.

The regular monthly meeting of the Providence Medical Association was called to order in the Medical Library by the president, Dr. D. L. Richardson, May 3, 1920, at 8:30 p. m.

The records of the previous meeting were read and approved.

The application of Dr. Edward A. McLaughlin, having been approved by the standing committee, it was moved and seconded that the secretary cast one ballot for his election; passed.

A report from the standing committee recommending to the association that the present rule be repealed and that the collation committee be allowed a maximum of \$50.00 per month to provide a more substantial luncheon for the members at the meetings was read. After some discussion a motion was passed authorizing the Collation Committee to use their discretion in expenditure for collation not to exceed \$50.00.

Dr. George A. Matteson read the memorial drawn up by the Committee on the death of Dr. Harry W. Kimball, after which a motion was passed that the memorial be spread upon the records and a copy sent to Dr. Kimball's wife and daughter.

MEMORIAL TO DR. HARRY W. KIMBALL.

Harry W. Kimball died at the City Hospital on March 28, 1920. It becomes our sad duty to record this fact and summarize his professional career for permanent preservation in the archives of this Association.

He was born in Woonsocket, R. I., on January 12, 1868, son of James Frederick and Ada Frances (Wales) Kimball. His education was obtained in the public schools of Woonsocket and at Cole's English and Classical School in

Pawtucket. In 1888 he entered the Portland (Maine) School for Medical Instruction and later attended the Medical Department of Bowdoin College from which he was graduated in 1891. He served for a time as clinical clerk in the Maine General Hospital and later in the year commenced his internship at the Rhode Island State Institutions.

In 1893 he received appointment as Surgeon to the Dermatological Department of the Rhode Island Hospital, a position which he filled until his death. From 1892 to 1894 Dr. Kimball was a Surgeon in the Staff of the First Regiment of Infantry Brigade, Rhode Island Militia, and subsequently continued his military interest with the First Light Infantry. He was a member of the American Medical Association, the Rhode Island Medical Society, the Providence Medical Association,—of which he was President in 1919,—the Providence Clinical Club, the Medical Improvement Club and the Rhode Island Medicolegal Society. He was surgeon to the Rhode Island Division of the American Red Cross and was one of those who hastened to Halifax to aid that city at the time of its great disaster from the explosion in December, 1917. He was also an Odd Fellow, a Free and Accepted Mason and a member of the University Club of Providence.

He was engaged in general practice for about sixteen years in the Edgewood section until about 1909 when he moved his office to 276 Benefit street and thenceforth restricted his practice to dermatology, a branch which had been his chief interest and study for some time. For two years before his death Dr. Kimball held the rank of Major and Surgeon in the United States Public Health Service as director of the campaign conducted by the Government against venereal diseases. In this capacity he established clinics for the treatment of these conditions in various parts of the State, and devoted most of his time to a vigorous educational propaganda by means of lectures and motion pictures throughout the State.

Dr. Kimball was married on January 15, 1896, to Miss Emma L. Hayward of Pawtucket, who with their only child, Lucille, survive him.

At his funeral on March 31, 1920, St. Stephen's Church was filled with representatives of every rank in this community, including the State and City Government, the several professions and organizations and institutions which he had served so well, and crowds of mourning patients and friends.

Filled as this record is with unremunerative public service, it gives but faint impression of the constant enthusiastic labors of the man in the community's interest. Throughout the State Dr. Kimball's opinion was sought on many a

case of undiagnosed exanthematous disease, and on the recognition of which the safety of the community might depend. On several occasions epidemics were prevented or held in check as a result of his skill in dermatological diagnoses. His opportunities to observe and treat cases of variola were unequalled by any of the men of our day, for on him fell the task of caring for the victims of this contagion in the old pest-house at Fields Point during the years before our City Hospital was built. His most recent work as surgeon in Public Health Service proved very exacting of his time and energy but was pursued with his usual vigor and devotion. The work was undertaken as a war measure and necessitated wearing the government uniform. He performed the duties fired with the highest patriotic zeal—to which was added a certain enthusiasm for a good fight—since certain worms in the community thought it necessary to oppose and obstruct his educational propaganda—and Harry loved to fight.

Dr. Kimball's genius for making friends and keeping them was the attribute most marked in his personality and which makes his death come closest home to his colleagues and host of acquaintances. There is not one of us who did not join in his cheery companionship and feel our faith renewed by his frank, honest humanity. To those of us who had the good fortune to know him best his death leaves a sense of loss which will long remain.

(Signed) William J. McCaw,
George A. Matteson.

The paper of the evening, "Encephalitis Lethargica," by Dr. Charles A. McDonald, was an exceptional description of the signs, signals and treatment of the disease followed by a report of eleven cases and the explanation of two cases, one practically cured and the other still presenting the bizarre clinic, spasm remaining after recovery from the disease. The discussion was opened by Dr. E. Wyllis Taylor, Professor of Neurology at Harvard University, who, after complimenting the author on the completeness of his paper, went on to emphasize the more important features in the diagnosis of these rather modern conditions. The discussion was further carried on by Dr. John E. Donley, Dr. William R. White and Dr. Jesse E. Mowry, and was closed by Dr. McDonald.

There being no further business the meeting adjourned on a motion of Dr. Burge at 10:30 p. m.

Attendance: 63 members and 25 guests.
A collation followed.

Respectfully submitted,
RAYMOND G. BUGBEE, M. D., *Secretary.*

THE RHODE ISLAND MEDICAL JOURNAL

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ORIGINAL ARTICLES

ENCEPHALITIS LETHARGICA.*

By CHARLES A. McDONALD, M. D.,
Providence, R. I.

Encephalitis Lethargica is a toxic, infectious disease characterized by lethargy, cranial nerve involvement, and a febrile state. In medical literature sporadic cases of this disease have been referred to as far back as the time of Hippocrates, and since the middle of the eighteenth century cases have been reported in detail of somnolence, ophthalmoplegia and fever. For our recent awareness we are indebted to Von Econimo. In Vienna, in the winter of 1916 and 1917 he observed several cases of somnolence and cranial nerve involvement and reported them and called the disease encephalitis lethargica. In March 1918, Netter in France, encountered a series of cases with this triad and identified these cases as like those described by Von Econimo and published a paper in which he called the malady epidemic encephalitis lethargica. A short time afterwards, epidemics of this disease occurred in England, Africa, America and Australia. In this country the first occurrence was probably in and around Boston, later in New York and Connecticut. Over a year ago I reported in detail twelve cases which I saw in the vicinity of Providence and Boston. Since that time I have examined more than twice as many.

European observers were uncertain as to the etiology of encephalitis lethargica. English physicians were first inclined to believe that the disease was due to the ingestion of poor meat, but when the disease was observed in children, a doubt arose and Marinesco and others showed with certainty that the pathology of this disease was not that caused by the bacillus botulinus. To ascertain the cause of the toxic agent, considerable experimental work has been done, but

results have not been gratifying, and it is fair to say the cause has yet not been discovered. Between encephalitis lethargica and poliomyelitis there are many points in common. It may be that one is an attenuated form of the other. From several points of view, however, the weight of evidence is that these diseases are not identical. When the epidemic first appeared, many cases followed a previous attack of influenza. There were some observers who believed that encephalitis was caused by influenza. There were other observers who believed that both were caused by the same etiological factor and there were those who believed that influenza and encephalitis were two diseases, concomitant and not interactive. In the later stages of the epidemic of encephalitis, the majority of the cases of the disease had not been preceded by an attack of influenza. From a rather exhaustive study of the argumentative literature on the question of the intimacy of these two diseases, I should say that the relationship was purely accidental.

In this country the mortality has been much lower than in Europe and the Isles. As a result there have not been very many post-mortem examinations on fatal cases. From the cases which have been reported with histological findings there seems to be a fairly definite pathology. On March 15, 1919, a physician of Boston, asked me to see a case of an Italian woman who had been asleep for five days. She gave the history of having had influenza four months previously and had made an uneventful recovery. Seven days before I had seen her she complained of headache, somnolence, and a feeling of being sick. The somnolence had gradually increased. She had had a temperature, and pulse was slightly elevated. Her blood was negative for syphilis, malaria and typhoid. Her white count was 10,000. I found her in a severe degree of lethargy. Her eyes were almost closed. Her pupils were unequal. The lines

*Read before the Providence Medical Association,
May 3, 1920.

of expression of her lower face were absent. There was a slight external strabismus in one eye. She appeared to be in typical coma. Supraorbital pressure of severe degree, however, caused her to remove the pressing finger with a well-executed co-ordinate movement. The deeper reflexes were absent. There was no Babinski. There was retention of urine. A lumbar puncture was done. There were twelve cells and the globulin was not increased. The Wassermann of the spinal fluid was negative. The family said that until that day she could be aroused to take nourishment and would answer questions intelligently. The somnolence increased, absolute unconsciousness came on, and death resulted without any additional signs or symptoms. The case caused considerable newspaper notoriety and it became a medical examiner's case. A post-mortem examination was done. Grossly, there was no evidence of meningitis,—nothing, except an increased vascularity, particularly around the brain stem. Additional examination of the brain showed findings consistent with those reported by others in fatal cases. The pathology may be considered, —first, an infiltration of the walls of the smaller vessels with lymphocytes and a few plasma cells. Second, occasional foci of infiltration with round cells. Third, slight changes in the nerve cells. Fourth, foci of perivascular hemorrhage.

When we keep in mind that a toxic, infectious agent affects a part or parts of the central nervous system in this disease, it is but natural to expect a multiformity in the clinical pictures. From the triad of symptoms with which we define the disease, one might infer that there was somnolence in every case. As a matter of fact insomnia often has been a persistent and difficult symptom to control. In the New York epidemic about 40 percent. of the cases had lethargy, and in the Boston epidemic I believe that the figures are about the same. The fever is so mild in some cases, and of such a short duration, that unless a very careful history is taken there will be no evidence of a febrile disturbance. The neurological syndrome varies according to the part of the nervous system involved, and this fact has given a big opportunity to study neurological localization. Some patients had a diplopia with a mild lethargy.

Others had multiple cranial nerve involvement without lethargy. Patients have been seen in this disease with hemiplegias; others with marked disturbances in co-ordination. The psychotic or group which showed mental upset has been of great interest. Some patients have been distinctly catatonic. One of the most interesting symptom-complexes was called the paralysis agitans type, where there was a typical mask expression such as one sees in paralysis agitans, associated with rigidity and fine involuntary movements. For the sake of convenience and for study, many observers have divided the cases of encephalitis lethargica into groups, naming them according to a presenting symptom of the disease. As a result we have a cerebral group, a paralysis agitans group, a lethargic group, a psychotic and a spinal group, and so on. While the cases which fall into these definite groups have a distinctive feature, yet there are most interesting variations. Some cases are, indeed, a complex of neurology.

On March 15, 1919 I was called to see a man who had had a diplopia for five days, sufficiently severe to absent himself from his work. Four days later he became lethargic and remained in that condition for four weeks. At the beginning of his lethargy, there was nothing noteworthy and indeed he looked as if he would fall into that group known as the lethargic group. At the end of the first week, however, his right side, arm, face and leg showed involuntary movements. For days the right side of his body would remain almost in a state of clonus. His eyes were partly open. There was a left facial pull. Deeper reflexes were just present on the left side and active on the right side. He had urinary retention. He suddenly awoke from his stupor and complained of weakness and awkwardness of his entire right side, and a fine tremor of his right hand. In this case, therefore, we had the lethargy, the hemiplegia and fine tremor.

Another example is a case which I saw six months ago. He was said to be suffering from catatonia and the question arose as to his commitment. He had had a fever for a few days and a mild lethargy and a slight disturbance in acuity of vision. Insomnia came on and was difficult to control. One pupil was larger than

the other and reaction to light was difficult. Accommodational response was noted as unsuccessful on account of lack of co-operation of patient. His lower face was expressionless. His eyes were half open. His face was mask-like. In addition to these findings he had a general rigidity of his body. His knees were flexed and his feet painfully extended. The muscle tone of his legs was greatly increased. Of the arm there was a beautiful cerea-flexibilitas. The most prominent symptom of this case was the catatonia, but in addition to that he had the cranial nerve involvement, the painful extension of his legs and insomnia rather than lethargy.

In discussing with you the various symptomatology of this disease, I might quote many, many cases, but the time allotted to me will not permit. For additional examples I shall expect our visitor, Dr. Taylor of Boston, in his discussion of the paper, to present to you, in his fascinating way, examples of the disease from his rich clinical experience. For the rest of my paper I shall discuss the cases of the disease which I have seen in the light of subsequent events.

It has been of interest to me to observe a residuum of the disease months after the acute onset. I have seen between thirty and forty cases of encephalitis lethargica with a mortality of between seven and ten percent. In discussing mortality, and the absolutely recovered cases, one must not rely upon the statistics of a specialist. The percentage of fatal cases must be furnished by the general practitioner. To those men, who have had the good fortune to be doing general practice, there must occur to their minds at this time, cases of somnolence with fever and asthenia which they thought were going to run a straight typhoid, or an atypical malaria, or an auto-intoxication, but which cleared up in a few days. On account of the busy professional life they gave very little thought to these cases and simply grouped them as successful cases without making a very great effort to give them a name or to define their nature. During the past two years there must have been a great number of these cases, some recognized, some unrecognized. Hence it is unfair to estimate recoveries unless one takes into consideration the data which the general practitioner could furnish and ought to furnish.

Likewise, in the fatal cases, every physician, I dare say, has had cases in which the patient complained of fever, somnolence, disturbance in vision, and a few days later went into convulsions and died. In reasoning by exclusion, without considering encephalitis in its order, uraemia was the most likely diagnosis. Brain abscess may have been considered. Some types of meningitis may have been thought of. But the majority of cases, I believe, were looked upon as probably uraemia or "what else". Many of these fatal cases, undoubtedly, were fatal cases of encephalitis lethargica. On the other hand, the specialist sees the advanced cases or ones which were very confusing, and when he reports the residuals it must be borne distinctly in mind that he is reporting the residuals of advanced or moderately advanced cases, and not the percentage of sequelae in an entire epidemic of encephalitis.

Without going too deeply into detail, I shall now report to you several cases in brief, cases in which there seems to be little doubt as to the diagnosis of encephalitis lethargica, and yet months afterwards show definite sequelae.

Case 1: A woman of thirty-four became lethargic, had diplopia and a lid-lag on one side. Pupillary response was lacking to light and in accommodation. Six months later she claims to be well, yet she shows one-sided lid-lag and an absence of pupillary response to accommodation.

Case 2: Eight months ago fever, cranial nerve involvement and somnolence for three days. Since that time most resistive insomnia.

Case 3: On March, 1919, patient had stupor, cranial nerve involvement, sphincteric disturbance, absent reflexes, mental confusion and disorientation. Twelve months later, weakness of leg; lack of interest; lacked spontaneity; amnesia for his sickness; insight into his condition; works daily; will reply to questions; no spontaneous conversation; considerable depression.

Case 4: March, 1919. Double optic atrophy; drowsy; languid; right-sided flaccid paralysis. "Eyes have cleared up. Indeed a remarkable cure." Right flaccid paralysis has gone. She is sluggish in school, in direct contrast to her record before her sickness.

Case 5: November, 1919. Headache, diplopia, fever, asthenia. General increased rigidity of muscles. Five months afterwards catatonic

condition continues but to a milder degree. Clear mentally. Shows insight, good memory. Cooperates with social welfare of his home.

Case 6: January, 1919. Had influenza, so-called, with delirium and insomnia. Fifteen months afterwards is a bit confused to a mild degree. Slightly depressed. While talking or at rest makes grimaces; puts his lips in a whistling position and keeps flexing his head.

Case 7: December, 1918. Diplopia, fever, headache, profound somnolence. For sixteen months after acute disease has gained fifty pounds in weight. Falls asleep while talking to you in your office, falls asleep in the street car on the way home from his business. Shows gross involuntary movements beginning at his face, which he puts into a whistling position, flexes and extends and rotates his head. He rotates his shoulders; curves his spine in a snake-like way; flexes his knee; this is a most bizarre movement. In conversation, or at work, movement is not so constant. At other times almost constant and it is distressing to himself and disconcerting to others.

Case 8: March, 1919. Alternating insomnia and lethargy; right hemiplegia; ptosis; facial paresis, etc. Yesterday he showed a mild right hemiplegia, more awkward than weak. Reflexes were slightly increased on the right. Facial paralysis of the central type. He complained of a speech disturbance and said that he could say every word he wished but after a few minutes' conversation he would show fatigue and enunciate indistinctly. After a few minutes' rest he would be able to continue as he did before the fatigue. Thus his conversation alternated between good articulation and almost mumbling expressions. In addition to these findings he had a fine tremor of his right hand not unlike that seen in paralysis agitans, and of the second and fifth fingers of his left hand,—an athetoid, choreiform movement.

Case 9: December, 1919. A case of encephalitis lethargica with active delirium, amnesia for four weeks with cranial nerve involvement, etc. Five months afterwards he shows an unusual fatigue with involuntary movements of his right hand and right face, also of his lower body. He has difficulty in keeping his pipe in his mouth. After a few minutes, jaw will oscillate to the right and left and the pipe will fly out.

Case 10: Sixteen months ago had influenza followed by a delirium, drooping of one eyelid. Today he shows left eye-slit narrower than right and non-synchronous winking. The right pupil reacts slowly to light but there is good accommodational response. There are involuntary movements of the face, neck, jaw and legs, wave-like in form, extending from the face to the legs. These movements do not interfere with this work only with the comfort of himself and others.

Case 11: Ten months ago brain fever for one month. Today inequality of pupils, poor accommodational response, slight facial asymmetry. Involuntary movements of the neck, body and thighs. Every few seconds he flexes his head, flexes his chin and flexes the right thigh on the body with a twisting motion to the right.

The sequelae of this disease, varied as they are, are of extreme interest. At the present time the involuntary movements are of the greatest interest. When cases with involuntary movements first occurred, they were considered but tics or functional disturbances. Some of them proceeded to die. It would be difficult to describe accurately the characteristics of these movements. Some of them are rhythmic, some are choreiform, some are athetoid. One woman, whom we saw at the Massachusetts General Hospital, spoke of the movements of her foot as the wiggles. These movements do not seem to interfere very much with voluntary action and are not so prominent when patient is employed.

Our familiarity with encephalitis lethargica is so recent that we have no basis to judge of the permanency or duration of time of these unfortunate sequelae.

DISCUSSION OF DR. McDONALD'S PAPER.

DR. E. W. TAYLOR, Boston, Mass.—What I shall attempt to do by way of discussion will be rather a supplement to what Dr. McDonald has already said in his paper. There are some points which I should like to emphasize in this extraordinarily interesting condition. There has, of course, been a great deal of dispute in regard to the name "Lethargic Encephalitis." Many cases are not lethargic. It has been suggested that the term epidemic encephalitis should be ac-

cepted and this has certain justifications as we wish to lay stress particularly on the epidemic character of the disease. Likewise it is unwise to speak of it simply as encephalitis. It does not define the condition. I feel that we must agree that the names are imperfect yet they lay emphasis on the conspicuous features of the disease. In the last few years we have had three epidemics of diseases that have extended through all the continents of the world. Poliomyelitis was one, influenza another, and the last, this most interesting condition which has spread around the entire world and has been reported from every continent.

Concerning the etiology there is surprisingly little knowledge. Some have suggested that it may be due to influenza. There has been some experimental work in Europe; observers have found an organism with which they have been able to reproduce encephalitis in monkeys. The work has not been substantiated in America. That one organism was the cause of these three diseases was naturally thought of when this epidemic of encephalitis came following that of poliomyelitis:—The encephalitis, the cerebral type of the disease; poliomyelitis, the spinal type. The important matter is largely where the lesion is located. It has been rather generally accepted that there might be a cerebral type of infantile paralysis. In my experience there are many cases of the cerebral types. This lends a certain weight to the supposition that this is an extension of the same process located predominantly in the brain rather than in the spinal cord. On the other hand there are certain definite differences in the two conditions. Poliomyelitis occurs in children predominantly, yet not exclusively, and encephalitis occurs predominantly in adults. The pathological anatomy is similar, yet not identical. In one the nerve cells are more involved; in the other, the perivascular spaces and the nerve cells not to any great extent. Observers who have had the greatest opportunities for study do not identify the two conditions. Encephalitis has no relation whatever to the sleeping sickness of Africa. The relationship of influenza, infantile paralysis, and encephalitis is of very great interest, but not definitely proven.

The question of diagnosis is of great importance and some of the conditions which have

been confused with encephalitis I wish to discuss. One statement should be made at the outset—that is the great tendency to be biased and to see encephalitis lethargica where no such disease exists. In the first place, tuberculosis meningitis might easily be mistaken for the disease. I recall a case with the complaint of headache, stupor, and fever, the spinal fluid findings were entirely negative, blood Wasserman was negative. I made a diagnosis of encephalitis. The headache, the stupor, and the fever continued and a second lumbar puncture showed tubercle bacilli in the spinal fluid.

Brain tumors might simulate encephalitis. I saw a young man who had been active in government service. About Christmas time last year he gave out from what was supposed to be overwork. His wife thought he had had fever. He was dull, stuporous and had sharp headaches, but no vomiting. He went away for rest and attacks occurred intermittently. I considered him a case of encephalitis. Later on I saw this man again and felt no justification in changing the diagnosis. The disc on one side showed a certain pallor. As I looked back on this record, the eye examination was not altogether satisfactory. Autopsy showed a brain tumor.

I saw another case which I thought at first was one of encephalitis. For ten or twelve weeks he had been in a stupor. A little later a friend of mine did a lumbar puncture which disclosed a positive Wasserman and an increased cell count. This led him to say that a mistake had been made in my diagnosis. The Wasserman is now negative and the spinal fluid is negative and no anti-specific treatment. I think this man had encephalitis. As to whether he had syphilis I am in doubt. I want you to bear strongly in mind the possibility of syphilis and to emphasize the necessity of making every effort to exclude this disease.

Another mistake which I made was on a case which showed one of the most striking external things that the disease occasionally shows. He was sitting in a chair when I saw him; he had a perfectly mask-like expression and other signs characteristic of paralysis agitans. To my great surprise he recovered. Recently I went over my notes and found a typical description of encephalitis lethargic.

About the classifications and the varied symptomatology I might go on at length but time will not permit me. I would like to say a word, however, about the involuntary movements which occur in this disease and on which the reader has placed great emphasis. These movements are very difficult to describe. They may involve a single group or several groups of muscles. They appear sometimes purposive, sometimes most bizarre. In the cases showing such movements there is probably an involvement of the basal ganglia alllying them to the *paralysis agitans* group.

About the prognosis I have nothing to add. The mortality varied with individual observers. Most of my cases fortunately got well.

DR. ARTHUR H. RUGGLES, Providence, R. I.—I have been extremely interested in this very clear presentation. In January, 1919, I saw in the army at the Base Hospital fourteen cases, all of which presented the symptoms which Dr. Taylor emphasized. All but one of them had had a fibrillation attack. One had influenza, another pneumonia, and the others had hyperthyrmia attacks. One case had no history of illness. One patient looked at himself and realized a facial change. He had muscular hyper-ptosis, a mask-like countenance, etc.

There is one thing that has not been emphasized, and that is the extraordinary muscular weakness following the encephalitis attack. I have seen this disease of a few days duration with the temperature not very high and muscular weakness, and the patient could not walk but a few steps without having to sit down or lie down. I have seen one or two cases following the acute attack of encephalitis, often of a rather unusual type, one of the principal features being a physical picture of great anxiety with restlessness and apprehension. The prognosis in these cases has seemed to vary, but on the whole with the improvement of the symptoms the mental symptoms improved. All these cases recovered in about six months.

DR. CHARLES A. McDONALD, Providence, R. I., closing—As far as prognosis is concerned, London had a mortality of fifty per cent., and England had a mortality of twenty per cent. In a long series of cases there was, out of 169 cases,

a mortality of about twenty per cent. In my series there was between eight and ten per cent. There are no available statistics for us to examine. Our modern idea of this disease began two years ago, so recent, indeed, that nobody has had an opportunity to predict or know. I do not know. The eleven cases of involuntary movements that I have seen have shown a tendency to recover. The Woonsocket gentleman has improved sixty-five per cent. since the last spinal fluid has been withdrawn. The other gentleman has not improved. The involuntary movements come, as a rule, late in the disease. Buzzard of England and Marie of France, who have spent considerable time on this disease, are of the opinion that in time they will get well.

PRESENT TUBERCULOSIS PROBLEMS.

In an unusually well written paper, Stewart of Ninette, Manitoba, discusses tuberculosis problems under the subdivisions, "Doctrines, Conditions and Needs." Tuberculosis is more a social than a medical problem; less a disorder of the individual than a disorder of the community. Its occurrence in the individual depends upon all conditions which enter into his life. Its development out of social conditions connects it up with every movement for the betterment of living conditions; and in thinking about it, nothing in a community is without relevance or interest. The stresses of army life have broken down many soldiers; but this has been balanced to some extent by the number of those who have been actually improved by the drill, regular life and outdoor work of the army. Asphyxiating gasses have not aroused tuberculosis. The good results of the war have been a better understanding of the disease, more accurate diagnosis, a more general resort to treatment in early cases, more and better equipped institutions for treatment; a juster idea of the tuberculous man's place in the community, and a fuller utilization of even the definitely tuberculous man for service. The most crying need is information that shall convey the truth about tuberculosis.—Stewart, David A. *Tuberculosis Problems of Today, Doctrines, Conditions and Needs.* American Review of Tuberculosis, March, 1920, vol. IV, No. 1, p. 1.

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FRANK B. SMITH	<i>President</i>	Washington
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Meets the third Thursday in each month

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R. I. Ophthalmological and Otological Society—2d Thursday—October, December, February, April and Annual at call of President Dr. Frank J. McCabe, President; Dr. C. J. Astle, Secretary-Treasurer.

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E. J. MATHEWSON	<i>President</i>	Pawtucket
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WASHINGTON
Meets the second Thursday in January, April, July and October

PATRICK J. MANNING	<i>President</i>	Wickford
W. A. HILLARD	<i>Secretary</i>	Westerly

WOONSOCKET
Meets the second Thursday in each month excepting July and August

ROBERT G. REED	<i>President</i>	Woonsocket
THOMAS F. BAXTER	<i>Secretary</i>	Woonsocket

EDITORIALS

NARCOTIC CLINICS.

The end of this month will see the passing of the clinics for narcotic habitues, which have been in operation throughout the country since the passage of the Harrison Anti-Narcotic Act. Established originally for a two-fold purpose, i. e., to serve as a sort of census or registration of the unfortunate drug addicts, and second, to attempt to cure the addict of his habit, they have achieved less success in the latter purpose than in the first. The clinic has been a dispenser of drugs, rather than a means of cure of

the habitue. This is in no sense a derogation of those who have given their service in these clinics, but rather an evidence of the inherent fallacy of attempting to cure drug addicts in outpatient services. Strict supervision and absolute control of the patient in a properly equipped institution offers at present the only hope of curing these unfortunates. With the abolition of the Narcotic Clinics, new plans must be devised to care for and control drug habitues, and it seems here in Rhode Island that hospitals such as the State Hospital at Howard offer the best solution for a vexing problem in the social life of the country.

A NEW SPECIALTY.

With the advance in medical knowledge and the intensification of endeavor in some restricted line, it is not uncommon to hear of a new specialty every week or two.

Apparently the latest branch to be raised to the dignity of a specialty is that of industrial surgery. Qualified surgeons who have seen the tremendous human wastage in industrial plants from lack of proper surgical care of the injured employee, have appreciated the need of such a specialty. The urgent necessity of a well trained surgeon, connected with every large industrial plant, is apparent to those who have occasion to see the results of treatment of these cases. The time is not far distant when responsible employers and employees with eyes opened to the possibilities of skilled treatment will demand the establishment of industrial clinics with thoroughly trained and qualified surgeons at their head, and a staff of specialists to whom certain special cases may be referred.

The beginnings of such clinics are already to be seen in Rhode Island. In a few years they will be a part of the plant of most of our large industrial organizations.

SUPPORT THE ADVERTISERS.

An advertiser in this JOURNAL complained to the writer that his advertisement in the RHODE ISLAND MEDICAL JOURNAL was entirely devoid of results and he felt obliged to discontinue it. A few days later he reported that three physicians had become customers of his and that he asked them if they came to him because of his advertisement in this JOURNAL and they all said "No."

This incident may be cited as a good test for a discourse upon the relation of the individual to the profession at large represented by the State and District Societies. How easy it would have been to say "Yes" and gain instead of lose a good friend of the JOURNAL.

We are fortunate in our advertisers. They represent the best in the various lines of commercial activity and they are worthy of our custom, and it requires but a word to assure them of our interest and that their expenditures of money to gain the attention of the profession is profitable.

It is a matter of business to them and should be a matter of pride to us. No State has the equal of Rhode Island in its home and library, few have a more prosperous Journal, in a financial way, and it should be a matter of pride and duty to boost our State Society in every way, and one way is to appreciate what the editor and business manager are doing and help them to greater success.

There is a lack of interest in the Society and its work. A failure to appreciate its benefits and a tendency to allow one or two to do all the work.

The young man may feel that he has nothing to gain from his association with his fellows, but he makes a mistake. As a unit he may think himself a howling success, a necessary adjunct to the civic welfare, because forsooth a few families employ him and flatter him with words of appreciation, he may have had unusual success as a surgeon or have gained prominence in some other way, till he imagines he is so far ahead of his fellows that he does not need the prestige of membership or activity in the State Society, but in time he is surpassed by his fellows. Younger men are doing what he thought he alone could do and sooner or later he passes away—all too soon forgotten, but the State Society still lives.

Future generations seeking to gain credit for original investigation and scientific research, will look for it in the archives of the Society and not in the biography of the individual, for the part he plays is transitory, but our State Society still lives.

The older man may think he is not appreciated by the younger element, that he is considered somewhat of an old fogey and so gradually withdraws from attendance and participation in the meetings of the Society, but he makes a mistake. In no other way can he keep abreast of the times, he needs the unction of new blood, the stimulation to effort,—gained by discussions of new facts and theories.

At the last meeting, held at Butler Hospital, there occurred a discussion of the Cisterna puncture. Ten members were asked what it was, two of them knew, but none of them could spell it. The older a man is the sooner he is gone and forgotten, but the Society still lives.

The man to whom the practice of medicine is a business rather than a profession may feel that he gets nothing practical and no pecuniary gain from membership in the Society, but he is in error. Insurance examination, both life and accident, play no small part in the physician's life. Membership in State Societies is a requisite for the position of Examiner in all reputable companies.

Are you a member of the State Society? is asked every expert in medicological cases. The fraternal feeling engendered by fellow membership is productive of extended acquaintances and courtesy and yields a dividend of greater value than its mere work in dollars.

If there are good reasons for joining your State Society, there are better ones for taking an active part in its proceedings. If you have views, proclaim them. A dumb man makes a poor auctioneer. If you want something done, do it yourself. A dead man cuts no ice. Get busy, make yourself a factor, your opinion worth while, your presence felt, but if you don't do any of these things, don't holler and say the Society is run by a clique, if you are not elected as the next President.

SOCIETY MEETINGS

September 2, 1920.

QUARTERLY MEETING R. I. MEDICAL SOCIETY.

The regular quarterly meeting of the Rhode Island Medical Society was held by invitation of the Trustees of Butler Hospital, in the chapel of that institution on September 2, 1920. The President, Dr. J. E. Mowry, presided, and in the absence of the Secretary, Dr. J. W. Leech, Dr. F. T. Rogers was appointed Secretary *pro tem.*

The meeting was called to order by the President at 4:30 p. m., with thirty-five members present. The records of the previous annual meeting of the Society were read and approved.

The first paper was by Dr. C. O. Cooke of Providence on the "Diagnosis and Treatment of Gall Bladder Disease." The paper was discussed by Drs. McKenna, Kelley, Gardner, Brown and Gerber.

Dr. Sanborn of the Staff of the Hospital presented statistics regarding cerebro spinal syphilis and the correlation symptoms. Dr. Ruggles fol-

lowed with remarks concerning the value of arsenical injections in paresis and syphilis of the nervous system.

The President announced the death of Dr. Herbert Terry, the first Vice President of the Society.

Following adjournment a clinical demonstration of cisterna puncture was made by Dr. McCusker of the Staff of Butler Hospital. A vote of thanks was extended to the Trustees of Butler Hospital.

Collation followed.

F. T. ROGERS,
Secretary pro tem.

WASHINGTON DISTRICT SOCIETY.

The regular quarterly meeting of the Washington County Medical Society was held at the Weekapaug Inn, Westerly, Thursday morning, July 8, 1920, with a fair membership present.

Consideration of the subject as to how faithfully the members had treated their brother practitioners who went into army service was laid over till the next meeting.

Dr. John Paul Jones of Wakefield was elected to membership and one new application for membership was received and referred to the Board of Censors.

Drs. Hillard, Robinson and Champlin were appointed a committee to draw up resolutions on the death of Dr. Henry K. Gardiner.

The invitation of the Board of Trustees to hold a meeting at Wallum Lake was received, but on account of the distance to go it did not seem advisable to accept.

It was voted that the members of this society would give gratuitous medical service to the so-called "Fresh Air Children" soon to come to these parts.

Dr. Leech spoke in behalf of the RHODE ISLAND MEDICAL JOURNAL, urging the men to have their papers printed therein.

Dr. Champlin reviewed the hospital question and it was voted to continue the committee.

Dr. Joseph L. Dowling of Providence gave an interesting address on "Some Common Eye Defects" and in the discussion which followed Drs. Leech and Ruggles participated.

A rising vote of thanks was tendered Dr. Dowling.

Adjourned and dined.

Dr. Henry K. Gardiner died at his home in Wakefield, R. I., April 29, 1920. He had suffered for a number of years from diabetes, but his immediate death was attributed to carcinoma of the liver. Dr. Gardiner was born in Pawtucket, R. I., in 1857 and studied first in New York University. He completed his medical course and graduated from the medical department of Dartmouth College in 1881. After some time spent in the Rhode Island Hospital and Providence Dr. Gardiner established himself in Charlestown, R. I., where he remained for two years. In 1888 he moved to Wakefield where he practiced for over thirty years.

Dr. Gardiner was a member of the American Medical Association, the Rhode Island Medical Society and the Washington County Medical Society of which he was twice president. He was a member of the Church of the Ascension and had been vestryman and warden for seventeen years. For twelve years Dr. Gardiner had been a trustee of the South Kingstown High School. He was a member and past master of the Hope Lodge, No. 25, F. & A. M.

A fine type of gentleman and physician, the tribute paid by a fellow practitioner was admirably expressed when he said of Dr. Gardiner that "He was always courteous, cordial and ethical in his relations with all men."

Dr. John Edward Ruisi has established himself in Westerly, R. I. A graduate of Tufts Medical School in 1917, Dr. Ruisi served an internship in the Carney Hospital in Boston and spent fourteen months with the A. E. F., much of the time in France. Upon his return he did six months work in the Metropolitan Hospital in New York. Dr. Ruisi intends to direct his work towards the field of surgery.

W. A. HILLARD, M. D., *Secretary.*

WOONSOCKET DISTRICT SOCIETY.

The annual meeting of the Woonsocket District Society was held June 23, 1920, at 4:30 p. m., at Dr. J. A. King's farm, East Blackstone, Mass.

The following officers were elected for the ensuing year:

President—Dr. Robert G. Reed; First Vice-President—Dr. Allen A. Weeden; Second Vice-President—Dr. Walter C. Rocheleau; Secretary—Dr. Thomas F. Baxter; Treasurer—Dr. A. Constantineau; Councillor—Dr. James A. King; Delegate to the House of Delegates of the Rhode Island Medical Society—Dr. John V. O'Connor; Board of Censors—Drs. J. Gaspar Boucher, Thomas S. Flynn and James H. McCooey.

The annual outing and clam-bake of the Woonsocket District Medical Society was held July 15, 1920, at Spring Lake.

An afternoon of sports was indulged in with swimming contests at 4:30 p. m. An excellent dinner was served at 5 p. m.

The Woonsocket District Medical Society met at the State Sanitarium, Wallum Lake, R. I., September 1, 1920, as the guests of the Superintendent, Dr. Harry Lee Barnes. Dinner was served at 1:30 p. m.

Dr. Barnes read a paper entitled "Artificial Pneumothorax."

T. F. BAXTER, M. D.,
Secretary.

HOSPITALS

RHODE ISLAND HOSPITAL.

The regular meeting of the Rhode Island Hospital Staff Association was held at the hospital, July 12, 1920, at 8:30 p. m. Dr. N. Darrell Harvey, president of the association, was in the chair.

Routine business was transacted and a new folder type of record which is about to be installed in the hospital was exhibited.

Adjourned at 10:15 p. m.

NORMAN C. BAKER, M. D.,
Secretary Staff Association.

**THE CHARTER
OF THE
Rhode Island Medical Society
TOGETHER WITH THE
RULES AND BY-LAWS
As Amended to March 4, 1915**

STATE OF RHODE ISLAND, A. D., 1812

AN ACT TO INCORPORATE CERTAIN PHYSICIANS
AND SURGEONS BY THE NAME OF
"THE RHODE ISLAND MEDICAL
SOCIETY."

As the Medical Art is important to the health and happiness of society, every institution calculated to further its improvement is entitled to public attention; and as Medical Societies, formed on liberal principles, and encouraged by the patronage of the laws, have been found conducive to this end:—

SECTION I. *Be it therefore enacted by the General Assembly and by the authority thereof it is enacted:* That Amos Throop, William Bowen, Pardon Bowen, Levi Wheaton, Rowland Greene, Samuel Hudson, Daniel Barrus, Joseph Comstock, Niles Manchester, John Wilkinson, John M. Eddy, Thomas M. Barrows, Charles Eldredge, Jacob Fuller, Moses Mowry, Peleg Clark, John Mackie, Jeremiah Williams, William C. Bowen, Joseph B. Pettes, Walter Wheaton, Stephen Harris, Sylvester Knight, Abraham Mason, Ezekiel Comstock, Augustus Torrey, A. Waldron, Caleb Fiske, Solomon Drown, Comfort A. Carpenter, Thomas Nelson, Thomas Warren, John W. Richmond, William G. Shaw, Cyril Carpenter, Thomas Carpenter, Gorton Jerauld, Chillingsworth Foster, Lemuel W. Briggs, John Aldrich, Eleazer Bellows, Eleazer Bellows, Jr., Jonathan Easton, Benjamin Waite Case, Enoch Hazard, David King, William Turner, Edmund Thomas Waring, and Jonathan Easton, Jr., be and they are hereby formed into, constituted and made a body politic and corporate, by the name of "THE RHODE ISLAND MEDICAL SOCIETY;" and that they and their successors, and such other persons as shall be elected in the manner hereafter mentioned, shall be and continue a body politic and corporate by the same name forever.

SEC. 2. *And be it further enacted,* That the members of said Society may, from time to time, elect a President, two Vice-Presidents, one or more Secretaries, with such other officers as they shall judge necessary and convenient; and they, the members of said Society, shall have full power and authority, from time to time, to determine and establish the names, number and duty of their several officers, and the tenure they shall respectively have in their offices.

SEC. 3. *And be it further enacted,* That the members of said Society shall have a common seal, and power to break, change, or renew the same at their pleasure.

SEC. 4. *And be it further enacted,* That the said Society may sue and be sued, in all actions, real, personal or mixed, and prosecute and defend the same unto final judgment and execution.

SEC. 5. *And be it further enacted,* That the said Society shall have full power and authority to make and enact such rules and By-Laws, for the better government of said Society, as are not repugnant to the laws of this State, or of the United States, and to annex reasonable fines and penalties to the breach of them, not exceeding the sum of fifty dollars, to be sued for and recovered by said Society, and to their own use, by action of debt, in any court having cognizance of the same; and also to determine the number requisite to constitute a quorum for the transaction of business; and to establish the time, place, and manner of convening the said Society.

SEC. 6. *And be it further enacted,* That said Society, at any stated legal meeting of the same, may, by a majority of the votes of those present, elect any suitable person or persons to be a member or members of the said Society: *Provided,* That all practicing Physicians or Surgeons, resident within this State, who shall be so elected, shall, within one year after such election, subscribe the By-Laws of the said Society, or otherwise declare in writing their assent to the same, or such election shall be void; and all persons not practicing Physicians or Surgeons, or not resident within this State, who shall be so elected, may be deemed Honorary Members of the said Society; and at any such meeting, the said Society shall have power, in like manner, to sus-

pend or expel, for improper conduct, any member of said Society.

SEC. 7. *And be it further enacted,* That the President and members of said Society, or such officers or members as they shall specially appoint for that purpose, shall have full power and authority to examine all candidates for the practice of Physic and Surgery, who shall offer themselves for examination, respecting their skill in their profession; and if, upon examination, the said candidates shall be found skilled in their profession, and fitted for the practice of it, they shall receive the approbation of the said Society, in letters testimonial, under the seal of said Society, signed by the President, or such other person or persons as shall be appointed for that purpose.

SEC. 8. *And be it further enacted,* That the said Society may and shall forever be deemed capable in law, of having, holding and taking, in fee simple or any less estate, by gift, grant or devise, or otherwise, any land, tenement, or other estate, real or personal, provided that the annual income of the whole real estate, that may be given, granted or devised to or purchased by the said Society, shall not exceed the sum of five hundred dollars, and the annual income on interest of said personal estate shall not exceed fifteen hundred dollars, and the annual income or interest of the said real and personal estate, together with the fines and penalties paid to said Society or recovered by them, shall be appropriated to such purposes as are consistent with the end and design of the institution of the said Society, and as the members thereof shall determine.

SEC. 9. *And be it further enacted,* That a meeting for the organization of the said Society shall be held in some convenient place within this State, and that Dr. Amos Throop be and he hereby is authorized to appoint the time and place of holding the said meeting, and to give notice of the same in two or more newspapers printed in the towns of Newport and Providence.

Passed February Session, A. D. 1812.

AMENDMENT.

It is enacted by the General Assembly as follows:

SECTION 1. Section 8 of "An act to incorporate the Rhode Island Medical Society, passed by

the General Assembly at its February session, A. D. 1812, is hereby amended so as to read as follows: 'Section 8. And be it further enacted that the said Society may and shall forever be deemed capable in law of having, holding and taking in fee simple, or any less estate by gift, grant or devise or otherwise, any land, tenement or other estate, real or personal, to the amount of one hundred thousand dollars. And the whole or any portion of said estate, real or personal, or the income thereof, or of any portion of the same, together with the fines and penalties paid to said Society or recovered by it, said Society may appropriate to such purposes as are consistent with the end and design of the institution of said Society, and as the members thereof shall determine.' "

SEC. 2. This act shall take effect immediately upon its passage.

Passed January Session, A. D. 1887.

RULES AND BY-LAWS

WHEREAS, It is granted and declared, in and by the Charter for incorporating a Medical Society in the State of Rhode Island, that the Fellows may enact such Rules and By-Laws, relative to the affairs, concerns and property of said Society, and relative to the duties of their several officers, as are not repugnant to the laws of this State, or of the United States; the following is hereby adopted as the Rules and By-Laws of the Rhode Island Medical Society:

ARTICLE I.—NAME OF THE SOCIETY.

The name and title of this organization shall be the Rhode Island Medical Society.

ARTICLE II.—PURPOSES OF THE SOCIETY.

The purposes of this Society shall be to federate and bring into one compact organization the medical profession of the State of Rhode Island; to extend medical knowledge and advance medical science; to elevate the standard of medical education, and to secure the enactment and enforcement of just medical laws; to promote friendly intercourses among physicians; to guard and foster the material interests of its members and to protect them against imposition, and to enlighten and direct public opinion in regard to the great problems of state medicine, so that the

profession shall become more capable and honorable within itself, and more useful to the public.

ARTICLE III.—COMPONENT SOCIETIES.

Component Societies shall consist of those district medical societies which hold charters from this Society.

SECTION 1. The Component District Societies shall comprise:

1. The Providence Medical Association, to include physicians residing in the City of Providence, and in the County of Providence, or in adjourning counties, where district societies do not exist and until district societies are organized therein.

2. The Pawtucket Medical Association, to include physicians residing in the Cities of Pawtucket and Central Falls, and vicinity.

3. The Newport Medical Society, to include physicians residing in the County of Newport.

4. The Washington County Medical Society, to include physicians residing in the County of Washington.

5. The Kent County Medical Society, to include physicians residing in the County of Kent.

6. The Woonsocket District Medical Society, to include physicians residing in the City of Woonsocket and vicinity.

SEC. 2. In no way interfering with the original charter or scope of these Societies they shall, in their relation to the Rhode Island Medical Society, be known as:

The Providence District Society.

The Pawtucket District Society.

The Newport District Society.

The Washington District Society.

The Kent District Society.

The Woonsocket District Society.

SEC. 3. Other district societies may become a part of this Society by vote of the House of Delegates and on approval of this vote by the Council.

SEC. 4. To approved societies, charters shall be issued, signed by the President and Secretary of this Society.

SEC. 5. The House of Delegates with approval of the Council shall have authority to revoke the charter of any district society whose actions are in conflict with the letter or spirit of this Constitution and By-Laws.

SEC. 6. Each district society shall be entitled to elect one Councilor to the Council, who, beginning at the close of the annual meeting of the district society, shall hold office for two years or until his successor shall be appointed. This Councilor must be a Fellow of this Society.

SEC. 7. Each district society shall be entitled to elect to the House of Delegates, one delegate for every twenty members and one delegate for each major fraction thereof, but each district shall have at least one delegate. Beginning at the close of the annual meeting of the district society, these delegates shall hold office for one year or until their successors shall be appointed. These delegates must be Fellows of this Society. The Providence district society in addition shall annually elect one member of the Board of Trustees of the Rhode Island Medical Society Building for a term of one year, beginning at the close of the annual meeting of the district society.

SEC. 8. The presentation of a certificate of election, signed by the Secretary of the district society, shall constitute the authority of the Fellow to act as Councilor or Delegate.

SEC. 9. Each district society shall have general direction of the affairs of the profession in its district, and its influence shall be constantly exerted for bettering the scientific, moral and material condition of every physician in the district; and systematic efforts shall be made by each member, and by the Society as a whole, to increase the membership until it embraces every qualified physician in the district.

SEC. 10. Each district society shall judge of the qualification of its own members, but, as such societies are portals to this Society and to the American Medical Association, every reputable and legally registered physician who does not practice nor claim to practice, nor lend his support to, any exclusive system of medicine, shall be eligible to membership.

SEC. 11. Any physician who may feel aggrieved by the action of his district society in refusing him membership, or in suspending or expelling him, shall have the right to appeal to the Council of this Society.

SEC. 12. A physician living on or near a district line may hold his membership in that district society most convenient for him to attend,

on permission of the society in whose jurisdiction he resides.

SEC. 13. When a member in good standing in a district society moves to another district in this State, his name, on request, may be transferred without cost to the roster of the district society into whose jurisdiction he moves.

SEC. 14. The Secretary of each district society shall keep a roster of its members, in which shall be shown the full name, address, college and date of graduation, date of license to practice in this State, and such other information as may be deemed necessary. In keeping such roster the Secretary shall note any changes in the personnel of the membership by death, or by removal to or from the district, and in making his annual report he shall be certain to account for every member who has lived in the district during the year.

SEC. 15. A member of a district society becomes a Fellow of this Society on presentation to the Secretary of this Society of an application endorsed by the Secretary and Councilor of the district society to which the applicant belongs and upon applicant's signing the Charter and By-Laws of this Society or his assenting to the same in writing and on his paying the annual dues to the Treasurer.

SEC. 16. Physicians who may be members of more than one district society shall be enrolled as Fellows of this Society from the district in which they live.

ARTICLE IV.—MEMBERSHIP.

SECTION 1. This Society shall consist of Fellows and Honorary members.

SEC. 2. The Fellows of this Society shall be the members of the district societies who shall qualify in accordance with these Rules and By-Laws and Fellows who may be elected in accordance with section 6 of the Charter and Fellows accepted on certificate from other State Medical Societies after this certificate has been approved by the Council.

SEC. 3. Honorary Members shall be either individuals not resident within the State or, if within the State, not practicing physicians or surgeons, and shall be nominated by the Council and elected by the General Session.

SEC. 4. Applications for membership shall be made to the Secretary and if from a member of a district society must be endorsed by the Secretary and Councilor of the district society to which the applicant belongs.

SEC. 5. Every endorsed or approved Fellow shall be notified by the Secretary of his election and, upon signing the Charter and By-Laws or assenting to the same in writing and paying the annual dues to the Treasurer, shall receive from the Secretary the diploma of the Society.

SEC. 6. Every Fellow shall annually contribute the annual dues and the same shall be due and payable to the Treasurer on January first of each year. Any Fellow who, for two successive years shall neglect to pay the annual assessment, after sixty days' notice by the Treasurer, shall cease to be a Fellow except under conditions named in the next section, and the Secretary, in his annual report, shall publish his name as dropped for non-payment of dues.

SEC. 7. Any Fellow who has removed from Rhode Island and desires to retain membership in this Society may do so without assessment upon notifying the Secretary and Treasurer, provided that his dues have been paid for the current year.

SEC. 8. Any Fellow who has forfeited his membership because of non-payment of dues may be reinstated as a Fellow upon application to and approval by the Council and upon payment to the Treasurer of any previous unpaid assessments and upon payment of the dues for the year in which he is reinstated.

SEC. 9. Fellows having attained the age of sixty-five years shall, if they so request, be exempt from the payment of dues.

SEC. 10. Fellows, not indebted to the Society, may at any time resign their membership, by sending a written notice of their intended resignation to the Secretary, who shall announce the same at the next regular meeting of the Society and place it upon the records of said meeting.

SEC. 11. In order to broaden professional fellowship this Society by its Council may arrange with other State Medical Societies for an interchange of certificates of membership, so that members moving from one State to another may avoid the formality of re-election.

SEC. 12. A Fellow is eligible to become a member of the American Medical Association on presentation of a certificate of Fellowship in this Society duly signed by the Secretary of this Society.

ARTICLE V.—SESSIONS AND MEETINGS.

SECTION 1. There shall be an Annual Meeting of the Rhode Island Medical Society, to be held in the City of Providence, on the first Thursday in June, at 4 o'clock P. M., or at an hour designated at a previous meeting, and seven days' notice shall be given to each Fellow by the Secretary.

SEC. 2. There shall be three Quarterly General Meetings of the Society, to be held as follows: On the first Thursday of September; on the first Thursday of December, and on the first Thursday of March, at 4 o'clock P. M., in the City of Providence or at an hour and in such town or city as the Society, at a previous meeting, shall designate; and seven days' notice shall be given to each Fellow by the Secretary.

SEC. 3. The General Meetings, which shall be open to all Fellows, shall be presided over by the President or by one of the Vice-Presidents.

SEC. 4. The General Meeting may recommend to the House of Delegates the appointment of committees or commissions for scientific investigations of special interest and importance to the profession and public.

SEC. 5. The General Meeting by a two-thirds vote of the Fellows present, may order a general referendum on any question pending before the House of Delegates, and when so ordered the House of Delegates shall submit such question to the Fellows of the Society, who may vote by mail or in person, and, if the members voting shall comprise a majority of all the Fellows of the Society, a majority of such vote shall determine the question and be binding on the House of Delegates.

SEC. 6. The General Meeting may receive and vote upon resolutions introduced at any session, but the resolution shall not be binding upon the Society until approved by the House of Delegates.

SEC. 7. The General Meeting shall refer all questions of an ethical nature brought before it to the Council without discussion.

SEC. 8. Special meetings of either the Society or of the House of Delegates shall be called by the President or on petition of twenty-five Fellows or ten delegates.

ARTICLE VI.—FUNDS AND EXPENSES.

Funds shall be raised by an equal per capita assessment on each member. The amount of assessment shall be fixed by the House of Delegates at its November meeting, but shall not exceed the sum of \$10.00 per capita per annum.

Funds may be raised also by voluntary contributions, from the Society's publications and in any other manner approved by the House of Delegates.

All expenditures of money for whatever purpose shall be ordered by the House of Delegates with the approval of the Council or upon its recommendation, except the few bills outside the Budget which may be authorized by the President and subsequently reported to the House of Delegates.

ARTICLE VII.—COUNCIL.

SECTION 1. The Council shall consist of the ex-Presidents of this Society, of the Councilors elected by the district societies and the President, First Vice-President, Second Vice-President, Secretary and Treasurer of this Society, ex-officio.

The President shall preside and in his absence the First Vice-President and Second Vice-President in order and the Secretary or in his absence a substitute shall act as clerk and keep a record of its proceedings.

The Council may make a report to the House of Delegates at any time and shall make an annual report.

SEC. 2. The Council shall meet in November and in May and may meet as necessity requires, subject to the call of the President or on petition of three members of the Council. Five members shall constitute a quorum.

SEC. 3. The Council shall act as Finance Committee and as such shall approve the bond given by the Treasurer and shall receive the audited accounts of the Treasurer and of other agents of the Society and present a statement of these accounts in its annual report to the House of Delegates.

Before they shall become binding the Council shall approve all resolutions appropriating money and shall notify the Treasurer of such approval. Before they shall become operative, the Council shall approve all orders from the House of Delegates to the Treasurer to sue in all actions, real, personal or mixed; or to sell, mortgage or lease any estate belonging to the Society and to execute the necessary papers and the Council shall notify the Treasurer of such approvals by written notice signed by the President and the Secretary.

Before the beginning of the fiscal year, the Council shall receive and approve a budget to be presented by the Treasurer and shall recommend to the House of Delegates the appropriation of sufficient funds to meet the budget.

SEC. 4. The Council shall consider all questions involving the rights and standing of Fellows, whether in relation to other members, to the district societies or to this Society.

These questions may originate in the Council, in the House of Delegates, in the General Session or in the outside community and may be presented orally or in writing as the Council may decide. The Council is authorized to contract any necessary expense therefor. All such questions and all questions of an ethical nature brought before the House of Delegates or the General Session shall be referred to the Council without discussion.

The decision of the Council in all such matters shall be final except that a decree of expulsion to be effective shall be referred to the General Session and there be affirmed by a two-thirds vote of the Fellows present. The Principles of Medical Ethics of the American Medical Association shall govern the conduct of members in their relation to each other and to the public.

SEC. 5. The Council shall approve all charters of district societies before they are issued and approve all revocations of charters by the House of Delegates before they are cancelled.

The Council shall consider all appeals from physicians who are denied membership in district societies. These appeals must be in writing.

If the Council decides in favor of the appellant, it may make earnest effort to secure membership in the district society for the appellant

or recommend him to the General Session for fellowship under Section 6 of the Charter.

SEC. 6. In the event of a vacancy in the office of the Secretary or Treasurer, the Council shall fill the vacancy until the next annual election.

SEC. 7. The Council may recommend Honorary Members for election by the General Session. The Council may excuse Fellows from payment of dues because of long service rendered the Society or because of sickness or misfortune. The Council shall approve an application for reinstatement of a Fellow dropped for non-payment of dues prior to its acceptance. The Council may arrange with other State Medical Societies for an exchange of certificates of membership.

ARTICLE VIII.—HOUSE OF DELEGATES.

SECTION 1. The House of Delegates shall be the legislative and business body of the Society and shall consist of 1, the Council; 2, the delegates elected by the district societies; 3, the Chairmen of the Standing Committees as now constituted and as may hereafter be formed; and 4, the President, First Vice-President, Second Vice-President, Secretary, Treasurer and Curator of this Society, ex-officio.

The President shall preside and in his absence, the First or Second Vice-President in order. The Secretary of the Society shall be the Secretary and keep a record of its proceedings.

SEC. 2. The House of Delegates shall meet in November and in May at least two weeks before the quarterly and annual meetings and may meet as necessity requires subject to the call of the President or on petition of ten delegates or twenty-five Fellows. Ten members shall constitute a quorum.

SEC. 3. At the meeting to be held in May, the House of Delegates shall elect the officers of this Society. This shall be the first business after the reading of the minutes. All elections shall be by ballot and a majority of the votes cast shall be necessary to elect.

At the May Meeting the House of Delegates shall elect a delegate to the House of Delegates of the American Medical Association in accordance with the Constitution and By-Laws of that Association.

At the May meeting, the House of Delegates shall hear and consider the annual reports of the Council, Secretary, the Councilors and the Standing Committees.

The House of Delegates shall have authority to appoint committees for special purposes from among the Fellows who are not members of the House of Delegates. Such committees shall report to the House of Delegates and may be present and participate in the debates on their reports.

SEC. 4. The House of Delegates shall have authority with the approval of the Council or upon its recommendation to appropriate all money necessary to meet the expenses of the Society. After voting the money necessary to meet the annual budget, they shall notify the Treasurer of their action.

The House of Delegates shall have authority, with the approval of the Council, to order the Treasurer in the name of the Rhode Island Medical Society to sue in all actions, real, personal or mixed and prosecute the same to final judgment and execution.

The House of Delegates shall have authority, with the approval of the Council, to order the Treasurer to sell, mortgage or lease any estate belonging to the Society and to execute the necessary papers.

It shall annually in November for the fiscal year, which shall begin January first of the following year, impose a tax which shall not exceed ten dollars.

SEC. 5. It shall approve all memorials and resolutions issued in the name of the Society before the same shall become effective.

SEC. 6. It shall receive and pass upon an application for a charter for a district society and its decision must be referred to the Council for approval or disapproval.

It shall have authority, with the approval of the Council, to revoke the charter of any district society whose actions are in its judgment in conflict with this Charter and By-Laws.

In sparsely settled sections it shall have authority to organize the physicians of two or more districts into societies, to be suitably designated so as to distinguish them from district societies, and these societies, when organized and

chartered, shall be entitled to all rights and privileges provided for component societies until such districts shall be organized separately.

SEC. 7. The House of Delegates may, by a two-thirds vote of its own members, submit any question before it to a general referendum, and the result shall be binding on the House of Delegates.

ARTICLE IX.—OFFICERS.

SECTION 1. The officers of the Society shall be a President, two Vice-Presidents, a Secretary, a Treasurer, the Standing Committees and two Auditors.

SEC. 2. The officers of this Society, with the exception of the officers otherwise provided for, shall be elected by the House of Delegates at an annual meeting to be held in May.

SEC. 3. Newly elected officers shall assume office at the close of the Annual Session of the Society.

ARTICLE X.—DUTIES OF OFFICERS.

SECTION 1. The President shall preside at all meetings of the Society, of the Council and of the House of Delegates. Ex-officio, he shall be a member of the Board of Trustees of the Rhode Island Medical Society Building and shall annually in December appoint one of its members who shall not be a member of the Providence District Society to serve for one year beginning January first. He shall in December appoint delegates to other medical societies and an Anniversary Chairman to preside at the next Annual Dinner. He shall appoint all committees not otherwise provided for; shall deliver an address at the annual meeting or provide a substitute, and perform such other duties as custom and parliamentary usage may require.

He shall have authority when in his judgment it is deemed necessary to order the Treasurer to pay bills against the Society not included in the approved annual budget, and shall report these payments to the House of Delegates.

Ex-officio, he shall be a member of the Committees on Scientific Work, on Legislation, on Publication and on Education.

So far as practicable he shall visit by appointment the various District Societies and assist the Councilors in building up these societies and making their work more practical and useful.

SEC. 2. The Vice-Presidents shall assist the President in the discharge of his duties. In the event of the President's death, resignation, disability or removal, the first Vice-President shall assume his duties.

The first Vice-President shall be a member ex-officio of the Council and House of Delegates and of the Committee on Scientific Work.

The second Vice-President shall be a member ex-officio of the Council and House of Delegates, and Chairman of the Board of Trustees of the library building.

SEC. 3. The Secretary shall attend the General Meetings of the Society, the meetings of the Council and of the House of Delegates and shall keep minutes of their respective proceedings in separate record books.

Ex-officio, he shall be Secretary of the Council, of the House of Delegates and of the Board of Trustees of the Rhode Island Medical Society Building. Ex-officio, he shall be a member of the Committees on Scientific Work, on Legislation, on Publication and on Education. He shall have custody of the seal of the Society. He shall be custodian of all record books and papers belonging to the Society, except such as properly belong to the Treasurer. At each meeting he shall demand that the manuscripts of the papers read shall be left with him in accordance with Article XII, Section 1, of these By-Laws. He shall see that each of the Fellows and Honorary Members is supplied with a copy of every essay published by the Trustees of the Fiske or other funds. He shall conduct the official correspondence, notifying members of meetings, officers of their election and committees of their appointment and duties. He shall employ such assistants as may be ordered by the House of Delegates and shall make an annual report to the House of Delegates. Acting with the Committee on Scientific Work, he shall prepare and issue all programs. He shall aid the Councilors in the organization and improvement of the district societies and in the extension of the power and usefulness of this Society, and perform such other duties as may be assigned him. He shall be exempt from dues.

SEC. 4. The Treasurer shall be ex-officio, a member of the Council, the House of Delegates, the Board of Trustees of the Rhode Island Medi-

cal Society Building and of the Committee on Arrangements. He shall give bonds satisfactory to the Council and the cost of these bonds shall be paid by the Society. He shall demand and receive all funds due the Society, together with the bequests and donations. He shall notify all Fellows who are two years in arrears for dues and if these dues are not paid within sixty days shall drop the name of the delinquent from the roll of Fellows and so notify the Secretary. At the November meeting he shall present to the Council a budget of the necessary expenses of the Society for the ensuing year.

When this budget has been approved by the Council and the amount voted by the House of Delegates, he shall have authority to pay all bills within the scope of the approved budget. Other bills he shall pay only on written order of the President.

Under the direction of the House of Delegates, with the approval of the Council, he shall have authority to sell, mortgage or lease any estate belonging to the Society and to execute the necessary papers.

In the name of the Rhode Island Medical Society, he may when so ordered by the House of Delegates with the approval of the Council, sue in all actions, real, personal and mixed and prosecute the same to final judgment and execution. He shall subject his accounts to the examination of the Auditors, and he shall make an annual report to the Council. He shall be exempt from dues.

ARTICLE XI.—COMMITTEES.

SECTION 1. The Standing Committees shall be as follows:

- A Committee on Scientific Work.
- A Committee on Legislation, State and National.
- A Committee on Publication.
- A Committee on Education, State and National.
- A Committee on Arrangements.
- A Committee on the Library.
- A Board of Trustees of the Rhode Island Medical Society Building.
- A Committee on Necrology, two Auditors, Trustees of Funds, and such other committees as may be deemed necessary.
- A Curator.

These committees shall be elected by the House of Delegates unless otherwise provided. The Chairman of each committee shall be, ex-officio, a member of the House of Delegates.

SEC. 2. The Committee on Scientific Work shall consist of three members, the President, the First Vice-President and the Secretary, and shall determine the character and scope of the scientific proceedings of the Society for each session, subject to the instructions of the House of Delegates. Seven days previous to each session it shall prepare and issue a program announcing the order in which papers, discussions and other business shall be presented.

In soliciting or accepting papers the committee shall call attention to Article XII, Section 1, which states that all papers read before the Society or any of its Sections, shall become its property and that each paper shall be deposited with the Secretary when read.

SEC. 3. The Committee on Legislation, State and National, shall consist of three members and the President and Secretary, ex-officio. Under the direction of the House of Delegates it shall represent the Society in securing and enforcing legislation in the interest of public health and of scientific medicine. It shall keep in touch with professional and public opinion, shall endeavor to shape legislation so as to secure the best results for the whole people, and shall strive to organize professional influence so as to promote the general good of the community in local, State and national affairs and elections and shall present an annual report to the House of Delegates.

SEC. 4. The Committee on Publication shall consist of three members and the President and Secretary, ex-officio.

This committee shall provide for the publication and distribution, and have charge of all the Society's publications, and shall make an annual report to the House of Delegates.

SEC. 5. The Committee on Education, State and National, shall consist of three members, one of which shall be elected annually for a term of three years, and the President and Secretary, ex-officio.

This committee shall be the State representative of the Council on Medical Education and of the Council on Health and Public Instruction

of the American Medical Association, including its Committee on Public Health Among Women. Its duties shall include efforts to elevate the standard of medical education and instruction of the public in matters relating to the general health and medical welfare.

This committee shall make an annual report to the House of Delegates.

SEC. 6. The Committee of Arrangements shall consist of three members and the Treasurer, ex-officio; shall provide a suitable place and make all necessary preparations for each meeting of the Society, shall provide a collation for each Quarterly Meeting, and shall, with the co-operation of the Anniversary Chairman, make arrangements for the Annual Dinner.

SEC. 7. The Committee on the Library shall consist of three members; shall have charge of the Library of the Society and custody of all books and pamphlets published by the Society and by the Trustees of the Fiske Fund; shall appoint some suitable person Librarian, the amount of whose compensation shall be approved by the Council; shall make rules concerning the use of the Library, and shall present an annual report to the House of Delegates.

The Librarian shall keep a list of all additions to the Library; shall see that the Library is open for reference at such hours as the Committee may direct; shall compile the necessary catalogues and reference lists; shall take a receipt for every book loaned from the Library, and shall perform such other duties as may be assigned him.

SEC. 8. The Board of Trustees of the Rhode Island Medical Society Building shall consist of seven members as follows: the Second Vice-President, who shall be Chairman, the Chairman of the Library Committee, one member to be elected at the annual meeting in January by the Providence District Society, one member who shall not be a member of the Providence District Society to be appointed at the quarterly meeting in December by the President, and the President, Secretary and Treasurer, ex-officio.

The Secretary of the Society shall be its Secretary.

This committee shall have charge of the Library Building, shall appoint some suitable per-

son janitor, assign him his duties and fix his compensation, but the amount must have the approval of the Council.

Through the budget of the Treasurer this committee shall recommend to the Council the amount necessary for the maintenance of the building. Other expenses of the committee shall be paid by the Treasurer only on written order of the President and these expenditures subsequently shall be reported to the House of Delegates.

SEC. 9. The Committee on Necrology shall consist of three members and shall prepare before December first of each year memoirs of members deceased during the year for insertion in the official publication of the Society.

SEC. 10. The Curator shall have charge of all anatomical and pathological specimens and preparations belonging or loaned to the Society and shall be a member of the House of Delegates, ex-officio.

SEC. 11. There shall be two Auditors. There shall be an annual retirement of the Senior Auditor; and at each Annual Meeting the House of Delegates shall appoint, for a term of two years, a new member who has not served within a year. The Auditors shall, annually, make careful examination of the Treasurer's books and vouchers; and if they be found correct, they shall affix their signatures to his report before it is submitted to the Council.

SEC. 12. Trustees of Funds. The President and the two Vice-Presidents of the Society, for the time being in office, are and shall be the Trustees of the Caleb Fiske Fund.

The President, the Secretary and the Treasurer of the Society, for the time being in office, are and shall be the Trustees of the Printing Fund, the Chase Wiggin Fund, the Horace G. Miller Fund, the J. W. C. Ely Fund and such other funds as may be created hereafter, provided other trustees are not designated by the creators of the funds or appointed by the House of Delegates.

ARTICLE XII.—MISCELLANEOUS.

SECTION 1. No address or paper before the Society, except those of the President and orators, shall occupy more than twenty minutes in its delivery; and no Fellow shall speak longer

than five minutes, nor more than once on any subject except by unanimous consent.

All papers read before the Society or any of the Sections shall become its property. Each paper shall be deposited with the Secretary when read.

SEC. 2. The deliberation of the Society shall be governed by parliamentary usage as contained in Robert's Rules of Order, when not in conflict with this Constitution and By-Laws.

SEC. 3. The Principles of Medical Ethics of the American Medical Association shall govern the conduct of members in their relation to each other and to the public.

ARTICLE XIII.—AMENDMENTS.

These Rules and By-Laws may be amended at any session by a majority vote of all the Fellows present at that session, after the amendment has been presented to the House of Delegates and passed by them.

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A Fellow of the Rhode Island Medical Society, who has always had the best interests of the profession at heart, has announced that he will give a prize of One Hundred Dollars to the reader of the best paper read before the Rhode Island Medical Society or the Providence Medical Association during the coming year. The officers of these Societies are to be the judges of the merits of the paper. The paper may be written upon any subject of medical interest and must be original.

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ORIGINAL ARTICLES

DIAGNOSIS AND TREATMENT OF GALL BLADDER DISEASE.*

By CHARLES O. COOKE, A. M., M. D.,
Providence, R. I.

In choosing a subject for the meeting this afternoon, it seemed to me that we might profitably spend the time in considering the history, symptoms, diagnosis, and briefly, the treatment of gall bladder disease. Gall bladder disease in this paper is defined as inflammation of the gall bladder with or without the presence of gall stones. Our early instruction in gall bladder disease, cholecystitis, was really based on the clinical picture of the complications of the disease; for example, when a stone became impacted in the cystic or common duct or when jaundice intervened.

In Osler's "Practice of Medicine" not many years ago, we find the following statement: "In a majority of the cases, gall-stones cause no symptoms. The gall-bladder will tolerate the presence of large numbers (of gall stones) for an indefinite period of time and post-mortem examinations show that they are present in twenty-five per cent of all women over 60 years of age." (Naunyn.) This statement accepted at the time by all of us, must now be modified, yes, contradicted. We now know that gall stones in the gall bladder do produce symptoms. We know that these patients complain of so called indigestion, belching of gas, distress after meals, attacks of colicky pains, chilly feelings, and so on. These are the cases variously diagnosed as indigestion, gastralgia, gastritis, intestinal indigestion, colitis, and so on. They drift along for years until suddenly a stone becomes lodged in the cystic or common duct with all the train of symptoms of gall stone colic, chills, fever, and possibly jaundice. Then the diagnosis is readily made and the patient is critically ill. An

operation must be performed to save the patient's life. The operation at this stage is often difficult and the mortality is easily 10-45 per cent. If we can recognize these cases while the disease is confined to the gall bladder the operation is much easier and the mortality is low.

In considering gall-bladder disease, we recognize two distinct types: cholecystitis with stones, cholecystitis without stones.

ETIOLOGY. Cholecystitis is of bacterial origin. Typhoid fever is undoubtedly a precursor of the disease. It is believed that the gall bladder becomes infected during the course of the disease, in many instances with the later formation of stones.

Pregnancy is a very important precursor of cholecystitis. In many of my cases, I have been able to trace the beginning of symptoms to a stormy puerperal period, where infection probably took place, either at full term or following a miscarriage.

Focal infections undoubtedly play a part. It is believed by Rosenow of the Mayo Clinic and others that streptococci from diseased foci under tension, for example, diseased tonsils, abscesses at roots of teeth, diseased sinuses, etc., find their way into the circulation and attack the wall of the gall bladder, causing cholecystitis with or without stones. This theory has been supported by definite laboratory experiments.

Rosenow took the diseased gall bladders removed at operation and proceeded as follows. He first cauterized the mucous membrane of the gall bladders with a red-hot iron. This killed all germs on the surface. He then ground up these gall bladders, mixed them up in sterile salt solution and grew cultures. From these cultures he isolated a streptococcus. These streptococci injected into dogs produced cholecystitis and in many cases, gall stones were found. The streptococci isolated from the human cases of diseased gall bladders showed an elective action for the gall bladder soil in

*Read before the Rhode Island Medical Society,
September 2, 1920.

dogs. It proves the presence of the infection and bacteria in the gall bladder wall, controverting the old idea that the infection was on the surface. It very clearly shows the necessity of removing the gall bladder rather than depending on short time drainage of the structure to cure the disease.

SYMPOTMS. Gall bladder disease is far more common in women than in men. These women are usually fat. The early symptoms are all referred to the stomach. The patient complains of a fullness in the epigastrium and of distress after eating. She gets relief by loosening her corsets or by making pressure over the stomach, i. e., epigastrium. Further relief comes from belching of gas. She may complain of colicky pains and of chilly feelings. There may or may not be tenderness over the gall bladder area. Given these symptoms in a woman who has borne children and is between 30 and 50 years of age, a diagnosis of cholecystitis and probable gall stones can safely be made. An old saying of Deaver's in regard to the symptoms of cholecystitis is "fair, fat and forty and belching of gas in a woman." I would like at this point to report a case of cholecystitis with stones proved at operation in which the stones were confined to the gall bladder.

CASE OF M. T., age 54, cholecystitis, cholelithias. March 12, 1919. P. H. Previous history of pain in stomach, pain around the heart, indigestion. Several previous diagnoses of cardiac trouble, indigestion and pelvic trouble. Ten days ago began to have abdominal pain beginning in right upper quadrant and passing to epigastrium. No relation to meals. Vomited bile. March 13, X-ray plates taken of gall bladder region show nothing definitely abnormal. In this case, it was thought better to wait until the acute symptoms subsided. Consequently, patient was kept in bed until March 31, 1919, when all symptoms had subsided. In the interval, pain was controlled by morphine, sodium bromide and the ice-bag.

Leucocyte count: March 14, 15,800; March 20, 23,000; March 23, 7,400.

March 31, 1919, cholecystectomy with difficulty, owing to the fat abdomen. Gall bladder full of stones, ducts free.

Convalescence was slow owing to infection of wound and later to development of tonsillitis,

Patient has been entirely relieved of symptoms and says she has not felt so well in years.

Such is the early history of cholecystitis with or without stones. Later the stones may leave the gall bladder and become impacted in the bile ducts. Immediately the picture changes and the symptoms become violent. The patient goes through an attack of gall stone colic. The attack sets in abruptly with agonizing pain in the right hypochondriac region, which usually radiates to the right shoulder or is very intense in the epigastric and lower thoracic regions. It is often associated with chills and fever and temperature from 102 to 103 degrees. The pain is usually intense and the patient rolls around in agony. There is vomiting, profuse sweating, and great depression of the circulation. The patient is only relieved by morphine. If the stone becomes lodged in the cystic duct, hydrops of the gall bladder occurs and an enlarged, palpable gall bladder is felt. The gall bladder at this stage contains a mixture of bile and mucus. Later on the bile disappears and the gall bladder contains pure mucus. I have recently operated upon such a case.

CASE OF E. S., age 59, married. Acute hydrops of the gall bladder, chronic cholecystitis, cholelithias.

COMPLAINT. August 12, 1920. Sharp, stabbing pain beginning over the iliac crest, radiating up to right costal margin and over to pit of stomach. Twenty-five years duration.

PAST HISTORY. First attack occurred when younger son was about five months old; similar attacks recurring during the last twenty-five years more severe in character. Patient was first told that her trouble was indigestion and later on, malaria. Still later on, she was told that in some way, she had strained the sciatic nerve in reaching, causing pressure of gas in the stomach. The time between attacks was from three months to two years. The only relief from pain was from hypodermic injections of morphine. The attacks came on with severe pain in the right side of the abdomen extending across the back, stomach, and down to the right hip. She usually vomited considerably which relieved the pain somewhat. Patient had no other organic trouble as far as she knew except the disturbed stomach condition during the gall bladder attacks and difficulty in breathing which

she felt was caused by gas pressure on the heart.

PRESENT ILLNESS. One week ago, patient began to have sharp, severe pains in right side and back. Vomited considerably, sour bitter taste. No jaundice. Has had similar attacks without jaundice for past twenty-five years.

OPERATION. August 13, 1920. Appendectomy, cholecystectomy. Five (5) inch gall bladder incision. Appendix normal. Removed in usual manner. Acute hydrops of the gall bladder which was tensely distended. Gall bladder aspirated and about two ounces of mucus removed. Gall bladder wall very friable, impossible to clamp it. Gall bladder dissected out with finger from below, leaving raw surface of gall bladder bed. Cystic duct tied and cut. Iodoform gauze drain in gall bladder bed and one cigarette drain to stump of cystic duct. Incision closed in layers above and below drain. Gall bladder was $\frac{3}{8}$ inch thick, edematous and friable, and contained four large stones, size and shape of ordinary dice, one stone being wedged tightly in cystic duct.

In certain cases, the gall bladder becomes filled with pus, producing an empyema of the gall bladder.

The gall bladder may become gangrenous and even perforate. There is usually in this type of gall bladder trouble, a rather active peritonitis of the upper abdomen. Adhesions are rapidly formed to wall off the infection and an abscess may develop. In other cases the infection may spread and a general peritonitis develop.

If the stone become not impacted in the cystic duct but continues on through the common duct, jaundice is very apt to occur, due to obstruction of the common bile duct and also, to swelling of the duct due to infection. The pancreas often becomes infected and a chronic pancreatitis set up.

The stone may become lodged in the common or hepatic ducts and stay there indefinitely. The stone rarely completely plugs the common duct, but acts as a ball valve, allowing bile to pass off and on. These cases are the ones that present the picture of intermittent attacks of pain, fever, chills and jaundice. Infection of the duct takes place and even the small bile ducts in the liver may become infected.

The stone may become lodged at the duodenal orifice of the common duct. I saw such a case in consultation. In this case, the patient had been jaundiced for five weeks, refusing operative treatment. At operation, a single stone was found impacted at the entrance of the common duct into the duodenum near the ampulla of Vater. The bile ducts above were greatly dilated. The common duct was opened and the stone removed with considerable difficulty, so tightly was the stone impacted. There was no bile in any of the ducts or gall bladder. The bladder had temporarily ceased functioning. After operation a rubber catheter was stitched in the common duct for drainage. There was no drainage of bile from the catheter for five days. Gradually the liver began to functionate and free drainage of bile took place and the patient recovered after a stormy convalescence.

Just a few words about cholecystitis without stones. There is a type of cholecystitis which seldom forms stones, the so called strawberry gall bladder. It is so named because the raised white spots on the mucous surface give it the appearance of a strawberry. These spots may occasionally be seen through the wall of the gall bladder. This condition is frequently accompanied by chronic pancreatitis with or without jaundice. Removal of the gall bladder cures the pancreatitis.

The regional lymphatics at the junction of the cystic and common ducts are always enlarged in cholecystitis. In doubtful cases, these glands should be sought for before removing a doubtful gall bladder.

Malignancy of the gall bladder and ducts occasionally occurs. It is so rare that I have not considered it in this brief paper.

DIAGNOSIS. In examining a patient for suspected gall bladder disease, we must not neglect the routine physical examination. This is of double value. It not only often saves us from a mistake and the patient from a needless operation, but it also gives us valuable information as to the general condition of the patient and also gives us a chance to estimate the surgical risk.

I recall one patient whom I anæsthetized for another surgeon in which failure to examine the heart led to a needless exploratory operation on a normal gall bladder.

Many other cases I have seen operated upon needlessly when a complete physical examination would have shown absent knee jerks and absent pupillary reflexes, when the true diagnosis was tabes dorsalis and not gall bladder disease and the pain was the girdle pain of tabes and not gall bladder pain.

We all know and I wish to emphasize that more mistakes are due to carelessness in examination than to ignorance.

A complete physical examination should be made. The heart, lungs, and abdomen should be carefully gone over. The blood pressure should be taken in every case. The urine should be examined.

A case I operated upon two years ago in which the diagnosis was fully established before operation, showed a marked mitral lesion, an elevated blood pressure, and albumen and casts in the urine. The patient was a young woman 35 years of age, the wife of a physician. The kidney function was 30 per cent. The question arose as to the operative risk. An electrocardiogram was taken and the opinion expressed by Dr. Fulton that the heart was in good condition and would stand the strain. The question of nephritis and diminished kidney function was discussed with Dr. De Wolf who believed that the kidneys would stand the strain. The gall stone attacks were increasing in severity requiring morphine injections. It was also felt that possibly the gall bladder was a focus of infection to the kidneys and that the removal of the gall bladder might help the kidney condition. After weighing all the evidence it was decided to proceed with the operation. The patient was given ether and the appendix and gall bladder were removed. The gall bladder contained sixty large sized gall stones. The patient made an excellent recovery and as far as I know has been entirely relieved from symptoms since. The present condition of the heart and kidney I do not know.

The reflexes should be carefully gone over. In cases like the one just mentioned the kidney function should be estimated.

The white count is of some value in the acute cases. It will show whether or not acute infection is present and the estimation of the poly-nuclear cells will give us a clue to the patient's resistance.

X-RAY. The X-ray is of some value in obscure cases. In one of my cases, an X-ray examination revealed the outline of a diseased gall bladder, which when removed at operation, was found to be white and thickened and to contain about fourteen gall stones with spicules.

It is stated by Dr. Gerber that a normal gall bladder never shows in the X-ray plate.

As to the diagnosis of gall stones by the X-ray, my experience has been that the pictures usually fail to show the stones. In a very few cases I have seen shadows indicating gall stones, but in most of my cases the X-ray report has been negative for stones.

ABDOMEN. The abdomen should be carefully examined first by inspection. Inspection will sometimes show the presence of a tumor or swelling. The patient should be instructed to take a long breath. Occasionally the edge of the liver can be observed to descend with inspiration. If a tumor be present, its exact location, shape, and size should be noted. A distended gall bladder is gourd shaped.

After a careful inspection, the abdomen should be carefully palpated. Any rigidity of the muscles should be noted, any masses seen or felt should be carefully outlined, during both inspiration and expiration. A mass in the upper abdomen may be liver, kidney, gall bladder, stomach, intestinal tumor, and in rare cases, a faecal impaction. How shall we differentiate? If the mass be liver, it can usually be demonstrated to be continuous with the liver especially by percussion. If the mass be kidney, it can be bimanually palpated with the patient on the left side. There is as you remember tympany on percussion over a kidney because the colon lies over the kidney. Conversely, if the mass be gall bladder, it is dull on percussion. A distended gall bladder may often be moved in the arc of a circle, the attachment at the liver being a fixed point. Intestinal and stomach-tumors are usually ruled out by their location and in these cases the bismuth meal and X-ray examination give information which can be obtained in no other way. If no mass be present the abdominal examination may show nothing abnormal. Usually and almost always in the attacks, there will be localized tenderness in the gall bladder region.

After palpation, careful percussion of the abdomen should be done. This is useful in determining the size of the liver, the presence or absence of faecal impactions, the outlining of masses or tumors previously noted. In acute cases, it is useful in determining the presence or absence of free fluid in the belly. This is very important in the acute cases. Free fluid in the belly is an indication (1) of free bile escaping from a ruptured gall bladder (2) of spreading diffuse peritonitis. To determine free fluid the abdomen is percussed until dullness is reached in the flanks and the line marked with a pencil. The patient is then turned on his side and any change in the line of dullness is noted.

TREATMENT. Removal of the gall bladder is the operation of choice for cholecystitis and gall stones. We formerly believed that drainage of the gall bladder was sufficient. That this treatment was faulty was shown by the rapid recurrence of the same symptoms that the patient suffered before the operation. After a cholecystostomy, or drainage operation, the patient is relieved for a time and then begins to experience his former symptoms. The reason for this is that we have left an infected gall bladder. Such a case I wish to report at this time.

CASE OF F. B., age 24, married, cholecystitis with gall stones. Nov. 16, 1909. Nine days ago woke up in night with pain in epigastrium, radiating to the back. Sharp cutting pain for one and one half hours required morphine to relieve. Vomited several times. Constant ache for nine days. Attacks of severe pain every day—today worst of all. Urine dark colored.

P. H. Eight years ago had indigestion, troubled a great deal with gas on the stomach. Had a great deal of distress until relieved by eructations of gas. Used to vomit almost everything eaten. Three years ago had an attack with pain in epigastrium and vomiting. Has had slight indigestion at times since.

P. E. Patient slightly jaundiced. Rigidity over upper abdomen, marked tenderness over whole upper abdomen, most marked in epigastrium and to right of median line. No masses, no dullness in flanks Nov. 19, 1909. Cholecystostomy for gall stones, appendectomy. Three inch right rectus incision. Gall bladder full of small stones. Gall bladder much thickened and reddened and 25 or 30 small irregularly round

stones removed with scoop. Several small stones milked up from common duct (?) and removed. Rubber tube in gall bladder. Appendix removed Nov. 26. Tube removed. Dec. 8. Discharged cured.

Readmitted on November 13, 1918. Diagnosis of acute colitis, age 33.

COMPLAINT. Pain in right upper quadrant radiating to the pit of the stomach. Has had no symptoms until one year ago when, during pregnancy at this time, vomited constantly just after eating. Four months ago, vomited constantly for five days and five nights. Vomit was brownish green. Bowels constipated. Pain radiating from stomach and right side to shoulder blade. Last menstruation Nov. 17, 1917. Patient in bed most of time during past year; felt constant pain and weakness.

P. H. One year ago developed pain in right side and pit of stomach.

P. E. Negative.

X-ray examination, bismuth series. The plates show evidence of slight adhesions in the first portion of the duodenum to the region of the gall bladder. No definite evidence of stone could be seen on the plates. The remainder of the examination shows evidence of a distended prolapsed cæcum with considerable amount of cæcal stasis. Discharged improved Nov. 19, 1918.

Dec. 26, 1918. Admitted for third time. One year ago began to have a pulling feeling from under right arm down toward old incision. Three months ago began to have sharp, crushing pains starting in right hypochondrium and going down to epigastrium through to back. Severe attacks of pain every day for a while. Becomes distended with gas during attacks, vomits with most attacks. Was slightly jaundiced during September and November.

Jan. 2, 1919. Cholecystectomy. Five inch right rectus incision from epigastrium to just below umbilicus. Right lobe of liver adherent to old scar. Gall bladder could not be seen. Edge of liver freed from peritoneum. Gall bladder densely adherent to liver above and pylorus and duodenum below. Adhesion cut away, gall bladder freed and seized with curved clamp. Gall bladder 6 inches long, very much thickened, pelvis of gall bladder contained

fifteen small stones. Discharged cured, January 25, 1919.

In any operation for gall bladder disease the common and hepatic ducts must be carefully examined and any stones present in those ducts should be removed. In such cases, the common duct should be drained by a rubber tube or soft rubber catheter. In cases of gall bladder disease and coexistent chronic pancreatitis with jaundice, a cholecystenterostomy should be performed. The gall bladder may be anastomosed to the duodenum, or even to the stomach or colon where the first named procedure is difficult.

In cholecystitis with chronic pancreatitis, without jaundice, cholecystectomy is the operation of choice. It is not necessary to drain the common duct in cases without jaundice. The removal of the gall bladder, thereby removing the focus of infection, cures the chronic pancreatitis.

In performing an operation on the gall bladder, the entire abdomen should be explored and any other pathological condition noted and corrected at the time or later by a second operation.

In a well placed incision it is easy to remove the appendix through the same incision and this should be done in every case.

In experienced hands, the operative risk is the same for cholecystostomy or cholecystectomy.

In exceptional cases, where acute infection is present outside the gall bladder, it may be desirable to drain the gall bladder and peritoneum to tide the patient over the dangerous period and then later go in and remove the gall bladder.

Recurrence of symptoms after operation are most common after drainage of the gall bladder where a diseased gall bladder is left in situ.

In other cases, stones are overlooked in the gall bladder or in the cystic or common ducts.

Recurrence of symptoms may be due to chronic pancreatitis. This is more common after cholecystostomy than after cholecystectomy.

In rare cases, adhesions may cause a recurrence of symptoms, but the Mayos believe that this is rather uncommon after cholecystectomy.

In a series of 2027 operations at the Mayo clinic, there were 219 secondary operations,—10.8 per cent.

Eighty per cent of these were for removal of the gall bladder,—120 cases. In 4 cases, secondary cholecystostomy was done owing to the poor condition of the patients. Two of these patients died.

In 109 of 219 patients, calculi were found either in the gall bladder, the ducts or both. One hundred and fifty-three patients had cholecystitis, in some instances, associated with stones. Adhesions were definitely noted in 148 cases and in 41 there was a definite pancreatitis. Either a mucous or biliary fistula was present in 37 cases. Seventeen of the 219 cases were definitely jaundiced. At the first operation stones were found in 154 of the 219 cases, in the gall bladder in 140, in the ducts 9, and in the gall bladder and ducts 5. Stones were found at the second operation in 109 cases. In 59 cases in the gall bladder, in 4 in the gall bladder and ducts, and in 41, in the ducts.

CONCLUSIONS. (1) Removal of the gall bladder is the operation of choice. It reduces the risk of later trouble and ordinarily is to be preferred to cholecystostomy for drainage.

(2) Infection in the gall bladder, liver, or ducts is the most frequent cause of secondary trouble and may recur many years after the primary operation.

(3) Recurrence of stones is more frequent in the gall bladder than in any other portion of the biliary tract. The common duct is next in report of frequency.

(4) In a small percentage of cases, stones will be overlooked in the common duct, in other cases, the stones reform in the duct.

DISCUSSION OF DR. COOKE'S PAPER.

DR. JOHN B. MCKENNA, East Providence, R. I., emphasized the point that chronic indigestion should be regarded as suspicious of gall bladder disease.

DR. JACOB S. KELLEY, Providence, R. I., spoke of the importance of the X-ray examination of the entire gastro-intestinal tract, if necessary, to determine the site of disease, which might lie outside the gall bladder itself.

DR. GEORGE W. GARDNER, Providence, R. I., emphasized the point that gall stones are the result of previous infection of the gall bladder and the importance of early diagnosis in these cases.

The removal of the gall bladder is usually of more value than drainage, but that in many cases it was necessary to drain the gall bladder rather than attempt to remove it.

DR. FREDERICK N. BROWN, Providence, R. I., reported a case of gall stones which had once come under his observation and had received various forms of treatment. A cure had eventually resulted following a course of osteopathic treatments.

DR. ISAAC GERBER, Providence, R. I., referred to the X-ray examination as intended to determine the presence of some pathological condition of the gall bladder or its vicinity rather than to determine the presence or absence of gall stones. The presence or absence of gall stones is not the important factor. Among conditions which may cause symptoms of gall bladder disease and which can be differentiated by accurate X-ray examination are the following: (1) gall stones; (2) pathological gall bladder (strawberry type); (3) pressure defects such as concave impressions of the duodenum seen with the opaque meal; (4) adhesions of the gall bladder to the hepatic colon or liver; (5) local dilatation of the end of the pancreatic duct in cases of pancreatic disease.

DR. CHARLES O. COOKE, Providence, R. I., closing, said that he had not intended to underestimate the value of the X-ray in the diagnosis of gall bladder disease, but thought that dependence should be placed upon the X-ray only in obscure cases.

CASE REPORT

SALIVARY CALCULUS.

By JAMES W. LEECH, M. D.,
Providence, R. I.

Mrs. C. L., aet. 52, was seen June 12, 1920, complaining of swelling and soreness in the right neck of a few days duration.

PREVIOUS HISTORY: She stated that in January, 1919, there developed a swelling below the angle of the right jaw, tender, red and causing painful mastication. On advice of her physician in a neighboring State, all her teeth were extracted, followed by vaccine injections—nature not known—and the swelling subsided in two to three weeks.

PRESENT ILLNESS: On June 4, 1920, swelling below and anterior to the angle of the jaw appeared again, made more painful and larger by attempts to eat. Palpation externally and through the floor of the mouth demonstrated the swelling to be the right submaxillary salivary gland. The outlet of Wharton's duct was slightly more prominent than its fellow.

With Nos. 1 and 2 lachrimal probes the opening was enlarged and a eustachian whalebone bougee introduced the entire length of the duct into the gland where a grating sensation made certain the presence of a salivary calculus. The duct opening was enlarged by slitting with a Graefe knife and the smallest size Hartman middle ear curette introduced full length. Although this reached the stone, it was impossible to deliver it through the duct and therefore with the curette still in place the duct was opened directly over the stone which was delivered through this wound.

The calculus was yellowish in color, chalky in consistency and about the size and shape of an uncooked pea-bean.

The subsequent history was uneventful, a flow of pus lasting for two or three days with healing complete and entire subsidence of glandular swelling and soreness in one week.

[This case report should point a moral to those physicians who see in supposedly diseased teeth the root of all physical ills and pains.—Ed.]

ANALYSIS OF WASSERMANN REACTIONS.*

*Made in Butler Hospital Between June 1, 1919
and Aug. 1, 1920.*

HARVEY B. SANBORN, M.D.,
Providence, R. I.

The Wassermann test is an accepted aid in the diagnosis of syphilis of the central nervous system and will, I believe, remain so. There is no question but that when done by properly trained workers in a modern laboratory, it is of great positive value: the only question is as to how we must interpret the partial reactions, i. e., a one to four plus with cholesterol and a negative with acetone or an antigen of like degree of sensitiveness, or a negative reaction along with positive clinical signs.

*Read before the Rhode Island Medical Society, September 2, 1920.

A plus reaction in any degree with acetone or a similar antigen, except in the presence of a very few unusual conditions, means syphilis almost always. Still in a doubtful case it is well to repeat or get the result of another laboratory. A negative result on the blood does not rule out syphilis of the nervous system by any means. In suspicious cases a further test of the spinal fluid should be made as we may obtain a positive result on the spinal fluid when the blood is negative and this means syphilis of the nervous system. Along with this we generally find some increase in cell count and globulin but a positive result of any one of these three tests on the spinal fluid in the absence of meningitis or polio-encephalo-myelitis, points toward syphilis.

In those cases where the result is positive with cholesterolin but negative with acetone, if not the result of anti-syphilitic treatment, I think we should repeat the test a little later and certainly have all the available tests on the spinal fluid performed, meanwhile reserving our decision. A provocative dose of arsphenamin in a case with a partial or negative reaction will sometimes cause a positive result afterwards.

Dr. Ruggles and I have gone over the laboratory findings made in this laboratory from June 1, 1919 to August 1, 1920, the work of Dr. Carl A. Sawyer, and checked them up with our clinical findings. The result, we think, is sufficiently interesting to present:

One hundred and sixty-four patients have had Wassermann tests on blood or on both blood and spinal fluid.

There are 117 of these in which blood alone was examined and found negative with both antigens; and as there was no clinical evidence or history of syphilis, lumbar puncture was not done.

In 21 cases both blood and spinal fluid were examined and found negative with both antigens.

In two of these cases lumbar puncture was done to establish the diagnosis of endemic encephalitis.

In the other 19 cases the spinal fluid was examined because of a history of previous ven-

ereal infection; evidence of organic disease,—e.g., arteriosclerosis, brain tumor, or some alteration in the reflexes; or to clear up the diagnosis where the mental picture was unclear.

In all the cases of these first two groups, continued clinical observation failed to reveal any evidence of syphilis.

There were 17 cases which clinically were undoubtedly cases of paresis or neuro-syphilis, and in which the laboratory findings were as follows:—

Twelve showed both blood and spinal fluid positive with both antigens, and also showed an increase in cells in spinal fluid; three showed a positive spinal fluid but a negative blood, and of these three all but one had had previous treatment. Clinically, two of these are cases of paresis; and one of them a case of tabes with mental symptoms; two cases showed a positive blood with a negative spinal fluid, and of these one had had previous treatment.

There are left nine cases, eight of whom showed at some time a positive blood reaction with the cholesterolin antigen but not with acetone. The other one of these nine, showed a one plus reaction with cholesterolin antigen on the spinal fluid but a negative blood.

Of these nine cases, three were known to have had syphilis and to have received intensive treatment for this. Two others had a history indicating a previous syphilis. The remaining four cases will have to be classed as doubtful cases. We have in them no direct evidence of syphilis; either from the history or from clinical findings. One of these cases has been lost sight of; in the other three, repeated laboratory examinations and clinical observations will probably clear up the question of the presence or absence of syphilis.

In our opinion, the laboratory findings follow very closely the clinical observations. A very small percent of cases show a weakly positive reaction with cholesterolin, and in our experience these are either cases which have been treated or ones in which the diagnosis can be cleared up by the repeated examination of blood and spinal fluid.

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R. I. Ophthalmological and Otological Society—2d Thursday—October, December, February, April and Annual at call of President Dr. Frank J. McCabe, President; Dr. C. J. Astle, Secretary-Treasurer.

EDITORIALS

AN EDITOR'S DREAM.

No one who reads much of contemporary medical literature will be disposed to deny that it is, on the whole, interesting and instructive. But having said this, one cannot but remark that it lacks at least one of the virtues that characterized the writings of the older physicians, we mean the clinical spirit and flavor. Why is it that article after article appears in our journals and yet out of so great a number so few treat of the helpful and common things that we medical men

most desire to know? Perhaps it is that writers in their search for the rare or the unusual are under a misconception as to what constitutes a valuable medical paper. We are supplied with enough and more than enough of imposing tables of statistics which, as Professor Karl Pearson has shown, have the appearance of science without its substance. For who but the veriest tyro would claim for statistical enumerations, as usually compiled, more than a very questionable value? We read positive statements about the utility of this drug or that in such and such a disease, but when we look more closely

into the premises of the writer's conclusions we discover frail foundations and not a little confusion of thought. Again, for example, vaccines are enthusiastically used and their virtues generally extolled with no apparent sense of their limitations and dangers. Blood-pressure readings are taken and if deemed excessive, we are forthwith assured that the patient's symptoms are explained; and this, too, in the face of the fact that high blood-pressure of itself, does and can explain very little. And so with all our printing presses we are bewildered in the midst of an accumulation of facts and of doctors who disagree.

Some day in the future, the not distant future, let us hope, the Editor of the RHODE ISLAND MEDICAL JOURNAL will receive in his mail an uncommon kind of article. As he reads it, a pleasant glow of satisfaction will suffuse his countenance and he will experience a quite unmistakable feeling of exhilaration. The author will submit it with an altogether too modest expression of reticence, the reason of this being that his contribution will seem to him so unlike the usual run of papers. And so will it be, for immediately he begins its perusal the Editor will observe that from his new contributor, a country practitioner perhaps, he is getting a discussion not of words but of things. The author has followed Lord Bacon's advice to learn from the things and not from the books about the things.

Here, indeed, is a man who has patiently studied human beings during the complex mutations of disease, who knows how to distinguish essential from merely contingent happenings, who has for long watched the effects and the interplay of regimen and remedies, and who has had leisure at night to reflect upon the experiences of the day. Leisure to reflect! What a difference that makes in his writing, giving directness to his descriptions, clearness to his statements, balance to his judgments.

Delighted thus far, the Editor is somewhat surprised to notice the complete absence of the customary rhetorical flowers plucked from German, French and other gardens. But the explanation soon appears. The author has no need of them. Like Duchenne of Boulogne

he is too busy setting down what he has himself seen in hospital, in office, and at the bedside to encumber his pages with the discussion of other men's thoughts. Moreover, this writer thinks concretely and allows himself no high imaginings, for being of a practical turn of mind he will not permit himself to be misled by such airy subtleties as "disease entities," "morbid species," and "environmental influences." He describes few cases, but does so with great accuracy and a nice precision, because as he says, he is convinced that one case well studied over a considerable period of time is worth a score superficially observed for a mere fraction of their course. Finally, the author has something to say about treatment, since even in these days of diagnosis he is old-fashioned enough to believe that treatment still interests the patient. He tells what happened to those to whom he gave no treatment and how things turned out with those patients whom he treated this way or that.

Having finished his reading, the Editor will muse whether outside of a dream (for he has been dreaming all the while) he will ever receive this new and simply delightful kind of paper. He knows full well that among his readers are some who can send it to him, and may he venture to hope that before long his dream may take on form and substance?

THE PRE-SCHOOL CHILD.

The present era is without question the era of the child. Previous to 1915 there were but two divisions of child Welfare in all the States, whereas at the present there are 34 such divisions. More and more are the authorities realizing that the best results in prevention come through child conservation. There is still one period of child life that has not received the proper amount of attention—namely, the pre-school period. This period marks the transition of the child from its helplessness as an infant, to its assumption of responsibility in its school work. The prenatal clinics and the child welfare stations afford plenty of opportunity for the mother to receive advice about the development of her baby, but most stations do not attempt to follow the child after its second birthday.

Also on the other side, the child in school is under the supervision of medical and dental inspectors, school nurses and recently in some communities is given the opportunity to have special care in the malnutrition classes. Certain it is that this period from two to six years is a most important one in the development of the child and it is hoped that in the future the same consideration and the same opportunities will be given to the pre-school child as is now given to the babies and to the child in school.

THE FISKE FUND.

The Society is remiss in fulfilling its obligations to the Caleb Fiske Fund and the noticeable absence of its members from the list of contestants is partly due to ignorance of the provisions of the deed of gift.

The records of the Trustees of the Fiske Fund are not available, but for a number of years there have been but one or two members of the Rhode Island Medical Society who have presented essays in competition for the prize.

It is not to our credit and it was not the intent of the donor that his prize should so frequently go to non-residents of Rhode Island. In the deed of trust it says "the Trustees shall cause these proceedings in the premises to be recorded in a book or books from year to year and deposited in the archives or cabinet of said Society, for safe keeping, inserting thereon the annual amount of said fund and the addition, if any, made thereto, the subject or subjects proposed for investigation, the amount of premiums offered, the names and places of abode of persons to whom premiums are awarded with such other facts and remarks relative to the application of such dividends as they may judge expedient and the proceedings or such parts thereof, as shall be audibly read before said Society at the annual meeting shall also be subject to the inspection of any member of the Society." This provision has not been carried out and without prejudice to the appointed secretary and treasurer of the Trustees, who has so faithfully attended to all of the details of the management of the Fund for many years, should be remedied.

The records of the Trustees, the statement of the treasurer of the Fund, its annual expenditures and present value should be made at each annual meeting. The Trustees should by record vote, re-elect its treasurer each year, that in event of the death or incapacity of the incumbent there may be no difficulty in transferring the Funds to his successor. There should moreover, be an audit of the books annually and especially in view of the definite provision of the donor should the records be kept in the library of the Society and available to any member of the Society, who may be desirous of entering into competition for the annual prize.

The Trustees of the Fiske Fund are responsible for the proper performance of the Society in fulfilling its obligations. The matter should receive prompt attention.

SOCIETY MEETINGS

PROVIDENCE MEDICAL ASSOCIATION.

June 7, 1920.

The regular monthly meeting of the Providence Medical Association was called to order in the Medical Library by President D. L. Richardson on June 7, 1920, at 8:50 p. m.

The records of the previous meeting were read and approved.

A letter of appreciation from Lydia V. Mitchell for the memorial on the death of Dr. J. W. Mitchell was read.

The first paper of the evening, "The Treatment of Syphilis", was read by Dr. Hilary J. Connor, which was a resume of the result of the work done in the Syphilis Clinic at the Providence City Hospital.

Following Dr. Connor's paper, Dr. Walter M. Burnett of New York presented a motion picture series depicting the symptoms, laboratory technique and treatment of syphilis.

The discussion was opened by Dr. C. D. Sawyer and continued by Drs. Henry McCusker, J. E. Kerney, A. Ruggles, C. A. McDonald, G. Swarts, C. O. Cooke, and C. H. Leonard. Dr. Connor and Dr. Burnett closed their discussions.

There being no further business the meeting was adjourned at 10:25 p. m. on a motion by Dr. Burge.

Attendance: 64 members and 12 guests.
Collation was served.

Respectfully submitted,

RAYMOND G. BUGBEE, M. D.,
Secretary.

WASHINGTON DISTRICT MEDICAL SOCIETY.

The quarterly meeting was held at the Colonial Club, Westerly, R. I., October 14, 1920, at 11 a. m. Paper: "Diseases of Stomach," by D. Frank Gray, M. D., of Providence.

W. A. HILLARD, M. D., *Secretary.*

HOSPITALS

RHODE ISLAND HOSPITAL.

The regular quarterly meeting of the Rhode Island Hospital Staff Association was held at the hospital, October 11, 1920, at 8:45 p. m. Routine business was transacted.

NORMAN C. BAKER, M. D., *Secretary.*

MEMORIAL HOSPITAL.

A special meeting of the Memorial Hospital Staff Association was held in the Out Patient Building, October 19, 1920, at 8:45 p. m. The President, Dr. J. A. Remington, was in the chair.

The question of hospital standardization was presented by the President of the Board of Trustees, Mr. Charles O. Read.

The staff voted to return to the system of monthly meetings which were in vogue up to the time of the war. A committee was appointed to carry out the suggestions voiced at the meeting.

J. F. KENNEY, M. D., *Secretary.*

MISCELLANEOUS

PRINCIPAL CAUSES OF DEATH.

CENSUS BUREAU'S SUMMARY OF MORTALITY STATISTICS FOR 1918.

Washington, D. C., February 2, 1920.—The Census Bureau's annual compilation of mortality statistics for the death registration area in continental United States, which will be issued

shortly, shows 1,471,367 deaths as having occurred in 1918, representing a rate of 18.0 per 1,000 population, the highest rate on record in the Census Bureau—due to the influenza pandemic.

INFLUENZA AND PNEUMONIA (ALL FORMS).

Of the total deaths 477,467, or over 32 per cent., were due to influenza and pneumonia (all forms), 380,996 having occurred in the last four months of the year during the influenza pandemic. The rate for influenza and pneumonia (all forms) is 583.2 per 100,000. Influenza caused 244,681 deaths and pneumonia (all forms) 232,786, showing rates of 298.9 and 284.3 per 100,000, respectively, these being the highest rates which have ever appeared for these causes. The rate in 1917 for influenza was 17.2 and for pneumonia (all forms) was 149.8. In fact the difference (416.2 per 100,000 population) between the 1917 and 1918 rates corresponds with the excess mortality which occurred in the last four months of the year from the influenza pandemic.

The next most important causes of death were organic diseases of the heart, tuberculosis (all forms), acute nephritis and Bright's disease, and cancer, which together were responsible for 391,391 deaths, or nearly 27 per cent. of the total number.

The death registration area in 1918 comprised 30 states, the District of Columbia, and 27 registration cities in nonregistration states, with a total estimated population of 81,868,104, or 77.8 per cent. of the estimated population of the United States. The Territory of Hawaii is now a part of the registration area, but the figures given in this summary relate only to continental United States.

The deaths from organic diseases of the heart numbered 124,668, or 152.3 per 100,000 population. The death rate from this cause shows a slight decrease as compared with 1917, when it was 153.2 per 100,000. There have been fluctuations from year to year, but in general there has been a marked increase since 1900, the earliest year for which annual mortality statistics were published, when the rate for organic diseases of the heart was 111.2 per 100,000 population.

Tuberculosis in its various forms caused 122,040 deaths, of which 108,365 were due to tuberculosis of the lungs. The death rate from all

forms of tuberculosis was 149.1 per 100,000, and from tuberculosis of the lungs, 132.4. The rate from tuberculosis of all forms declined continuously from 200.7 per 100,000 in 1904 to 141.6 in 1916, the decrease amounting to nearly 30 per cent.; but for 1917 and 1918 increases are shown, the 1918 rate being somewhat higher than the rate for 1917, when it was 146.4. Until 1912 more deaths were due to tuberculosis than to any other single cause, but in that year and during the period 1914-1918 the mortality from tuberculosis was less than that from heart diseases.

Bright's disease and acute nephritis caused 79,343 deaths, or 96.9 per 100,000. This is a noticeable decrease as compared with 1917 when the rate was 107.4 per 100,000.

Cancer and other malignant tumors were responsible for 65,340 deaths, of which number 24,783, or nearly 38 per cent., resulted from cancer of the stomach and liver. The rate (79.8) is a decrease from 1917, when it was 81.6. With the exceptions of the years 1906, 1907, 1911, 1917, and 1918, there has been a continuous increase in the death rates from these diseases.

Apoplexy was the cause of 64,904 deaths, or 79.3 per 100,000. This rate, too, declined, having been for 1917, 82.9.

Diarrhea and enteritis caused 59,109 deaths, or 72.2 per 100,000, a decrease from the rate (79.0) for 1917. More than four-fifths of the total deaths charged to these causes in 1918 were of infants under two years of age.

Arterial diseases of various kinds—atheroma, aneurism, etc.—resulted in 19,027 deaths, or 23.2 per 100,000, which rate is somewhat less than that (25.3) for 1917.

Deaths from diabetes numbered 12,927, or 15.8 per 100,000. The rate from this disease increased almost continuously from 9.7 in 1900 to 17.0 in 1916, but since 1916 a slight decrease for each year is apparent. The rate for 1917 was 16.9.

Bronchitis caused 12,783 deaths, or 15.6 per 100,000. This rate is lower than that for any preceding year. The proportional decline from 1900, for which year the bronchitis rate was 45.7, to 1918, amounted to 66 per cent.

The rate for diphtheria is 13.8, representing 11,280 deaths. As compared with 1917, when the rate was 16.5, there is a perceptible decrease.

TYPHOID FEVER.

Typhoid fever resulted in 10,210 deaths, or 12.5 per 100,000. The mortality rate from this cause has shown a remarkable reduction since 1900, when it was 35.9, the proportional decrease amounting to 65 per cent. This highly gratifying decline demonstrates in a striking manner the efficacy of improved sanitation and of the modern method of prevention—the use of the antityphoid vaccine.

WHOOPING COUGH AND MEASLES.

Whooping cough and measles together were responsible for 22,534 deaths of adults and children, or 27.6 per 100,000. The rates for these diseases were, respectively, 16.8 and 10.8 as compared with 10.4 and 14.3 for 1917.

EXTERNAL CAUSES.

Deaths due to external causes of all kinds—accidental, suicidal, and homicidal—numbered 82,349 in 1918, corresponding to a rate of 100.6 per 100,000 population. This is a noticeable decrease, the rate for 1917 being 108.8. In fact, except for automobile and machinery accidents and injuries, all the external causes showed a general decrease in 1918.

The greatest number of deaths charged to any one accidental cause—10,330, or 12.6 per 100,000—is shown for falls.

Next to falls, the greatest number of accidental deaths—8,610, or 10.5 per 100,000—resulted from railroad accidents and injuries.

Deaths from automobile accidents and injuries in 1918 totaled 7,525, or 9.2 per 100,000 population. This rate has risen rapidly from year to year, which strongly suggests the need for better traffic regulations and better enforcement of those we now have.

Burns—excluding those received in conflagrations—were responsible for 6,638 deaths, or 8.1 per 100,000.

Accidental drowning caused 5,633 deaths, or 6.9 per 100,000. This rate is considerably less than that for any preceding year since 1910.

Deaths due to accidental asphyxiation (except in conflagrations) numbered 3,371, or 4.2 per 100,000. This rate is slightly less than that, 4.5,

for the previous year, but is somewhat higher than the rate for any year during the preceding ten-year period.

Mine accidents and injuries resulted in 2,497 deaths, or 3.1 per 100,000.

Machinery accidents caused 2,371 deaths, or 2.9 per 100,000, a rate greater than that for any year covered by the Bureau's mortality records.

Deaths resulting from street-car accidents numbered 2,366, corresponding to a rate of 2.9 per 100,000.

Deaths due to injuries by vehicles other than railroad cars, street cars, and automobiles numbered 2,337, or 2.7 per 100,000.

The number of suicides reported for 1918 was 9,937, or 12.1 per 100,000, the rate being the lowest shown for any year since 1903.

Other deaths due to external causes total 20,834, or 25.4 per 100,000.

COMPULSORY HEALTH INSURANCE.

CHAMBER OF COMMERCE OF THE STATE OF NEW YORK.

At the regular monthly meeting of the Chamber of Commerce of the State of New York, held April 1, 1920, the following preamble and resolution, presented by its Committee on Insurance, were unanimously adopted:

To the Chamber of Commerce:

**COMPULSORY HEALTH INSURANCE
BILL OPPOSED.**

Whereas, On February 6, 1919, your Committee on Insurance reviewed the earlier action of the Chamber with regard to certain bills in Albany, providing, in varying forms, for compulsory health insurance, and then restated its belief that a commission should be created to study the whole matter before any legislation of this character was undertaken by this State; and

Whereas, The committee's recommendations at the time were approved by the Chamber, but so far as your committee is informed no commission has ever been created, no comprehensive study of the subject has been made on behalf of the State; and

Whereas, Senator Davenport has introduced in the Upper House of the Legislature, Introductory No. 986, a Bill "To conserve the human

resources of the State by establishing for employees a system of mutual health insurance funds, constituting Chapter 171 of the Consolidated Laws; and

Whereas, Said bill if enacted will make health insurance after the first of April, 1921, compulsory upon every employee in the State, with minor exceptions, without physical examination; and

Whereas, Further study of the whole subject has convinced your committee that compulsory health insurance attacks the problem from the wrong point of view, and that it is economically unsound and thoroughly unwise. In support of which conclusion your committee submit the following general observations:

1. It is opposed to sound public policy in a democracy, in fostering objectionable class distinctions and a dangerous tendency toward a stratification of industrial society.

2. It is opposed to public policy in encouraging public extravagance, largely through the employment of unnecessary official and other functionaries.

3. It is opposed to public policy by giving encouragement to socialistic tendencies, and the further and dangerous enlargement of the sphere of the State.

4. It is opposed to public policy in favoring a further encroachment upon private rights and privileges, including the most personal concerns of the individual, and the supervision, control and direction of the person in matters of health and welfare.

5. It is a danger to democracy, in that the promises made are impossible of fulfillment, and on this ground will ultimately create an unwholesome industrial unrest.

6. It is a delusion in that the poorest poor, who are most urgently in need of sympathetic medical and financial support and assistance are largely if not wholly outside the sphere of social insurance activities of any and every kind.

7. Such demand for compulsory health insurance as exists has been artificially created by a skillful propaganda.

8. It is opposed by conservative leaders of organized labor in this country and abroad.

9. It is opposed by business interests as visionary and dangerous and unnecessary class legislation.

10. It is at best a palliative, and does not reach the seat of the difficulty.

11. It does not promote the health of the individual, but rather fosters a tendency toward malingering and an undue prolongation of minor ailments for the purpose of wrongful gain.

12. Experience in other countries shows that medical treatment under its rule results in a standardized method of mediocre medical practice—the doctor who gives his whole time to the service reduces his profession to a mere trade; the doctor who gives only part of his time to the practice is bound to give it indifferent attention.

13. Experience abroad has also shown that medical practice under this system tends strongly toward a system of public medicine, opinion being divided as to whether under such a system private practice should be allowed at all, or whether the system should be universal; in other words, whether the doctor should become a State employee, leaving private practice and the work of the specialists to the few who are unwilling to submit themselves to State control.

14. All the estimates in England have been more or less at variance with actual experience. The State contribution has been very much greater than had been assumed would be necessary at the outset.

15. English experience shows the original assumptions as to benefits were erroneous, and a continuous agitation exists in favor of an increase in benefits. This applies to the work of those who have the work of administration, and particularly to the fees of the doctors as well as to the benefits guaranteed.

16. We are informed that in Great Britain it is absolutely impossible to fulfill the promises held out by Mr. Lloyd George in 1911. Some facts from the British experience are informing—

(a) Beginning with the non-contributory old-age pensions as a gift to the poor, the British Nation assumed a responsibility of possibly £30,000,000 per annum.

(b) This during the war was followed by out-of-work donations costing not far from £50,000,000 per annum and a bread subsidy estimated at £60,000,000 per annum and in addition, allowances on account of coal prices equivalent to a subsidy of £30,000,000 per annum.

(c) On a basis of the best data obtainable, the British Government's grants and gratuities and subsidies of all kinds under national health insurance cannot be less than £30,000,000 per annum.

(d) or a total of probably not far from £200,000,000 per annum in grants, gratuities and subsidies.

These do not include the Poor Law expenditures, war pensions, etc.

17. Experience in Germany has been similar to that in Great Britain.

18. Compulsory health insurance is an elaborate bureaucratic scheme which controls wage-earners' lives and wage-earners' incomes. The hope held out that the institution to be created will be thoroughly democratic and, apart from the overhead charges, self-sustaining, never has been and probably never will be realized. Control of essentials soon passes into the hands of the State authorities, with a corresponding increase in the power of bureaucracy.

19. Generally speaking we have made greater progress in sanitation, in the reduction of the death rate, in the development of voluntary health promoting agencies and all that goes with it, than any other country in the world; and

Whereas, In addition to these general observations, your committee offers the following observations with regard to this particular bill which we believe to be un-American, economically unsound, socially wrong and financially unwise:

1. The cost of insurance proper is to be divided substantially equally between the employers and the employees. Someone has estimated the probable annual charge at \$250,000,000. It is further estimated that the fixed overhead charges—one-half of which must be paid by the employees, will amount to \$20,000,000 a year; and although it is difficult to arrive at any estimate of what the State must pay, over and above the payments from the various funds created, the forecast of from \$8,000,000 to \$9,000,000 per annum is the best your committee has been able to arrive at. This as the plant developed probably would ultimately prove to be underestimated.

2. The head of the Health Insurance Bureau which is to be created by the Industrial Commission is given what amounts to autocratic powers over the services of physicians to be employed.

3. There seems to be no limit to the expenses which may be incurred.

4. Amongst the amounts that may be charged to "Management Expenses" of funds is an apparently unlimited authorization for expenses in investigating disease prevention, and instruction in hygiene—excellent undertakings if properly pursued and under proper limitation.

5. Under the general head of "managing and conducting" the business, there is apparently no limit whatever fixed as to the expenses which may be incurred; but the various funds must be planned so as to cover whatever may be incurred.

6. The insurance of every employee, with the exceptions named, without regard to physical examination or condition, would probably result after a time in a practice under which a person in indifferent health could not get a job anywhere.

7. Provision is made to insure people who are not residents of the State, the inherent difficulties of which proceeding do not seem to have occurred to the authors of the bill.

8. Appropriations of the New York Legislature for all purposes have increased from \$43,000,000 in 1910 to \$117,000,000 this year. Assuming that the State would not have to pay anything beyond the estimated \$8,000,000 or \$9,000,000 overhead charges, there is nothing in the German or English experience to show any reduction in their poor law expenditures, and there is no reason to assume that such a measure here would produce a different experience.

9. A proper increase in the activities of the Department of Public Health, better instruction in sanitation and hygiene in the public schools, almost any program that does not invade private rights and impair self-respect, would be welcomed by this and every public-spirited body.

Resolved, That the Chamber of Commerce of the State of New York is opposed to the passage of what is known as the Davenport Bill, Introductory No. 986, and urges upon the

members of the Legislature the duty of opposing its enactment into law.

Respectfully submitted,

DARWIN P. KINGSLY, *Chairman*

WILLIAM J. TULLY,

JOHN J. PULLEYN,

ISAAC B. JOHNSON,

WILSON S. KINNEAR,

ALBERT B. ASHFORTH,

Of the Committee on Insurance.

Attest:

CHARLES T. Gwynne,

Secretary.

ALFRED E. MARLING,

President.

New York, April 2, 1920.

NOTICE

THE JOURNAL and the Co-operative Medical Advertising Bureau, 535 North Dearborn street, Chicago, maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments, and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

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PRIZE FOR THE BEST PAPER IN OUR SOCIETIES.

A Fellow of the Rhode Island Medical Society, who has always had the best interests of the profession at heart, has announced that he will give a prize of One Hundred Dollars to the reader of the best paper read before the Rhode Island Medical Society or the Providence Medical Association during the coming year. The officers of these Societies are to be the judges of the merits of the paper. The paper may be written upon any subject of medical interest and must be original.

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ORIGINAL ARTICLES

A WIDER USE OF TUBERCULOSIS CLINICS AND HOSPITALS.*

By ELLIOTT WASHBURN, M. D.,
Providence, R. I.

When your President asked me ten days ago to read a paper on tuberculosis at this meeting, I told him what he probably knew very well—that there is very little new to say about tuberculosis. The mortality rate, the methods of infection, the methods of treating tuberculosis, I thought this Society would not care to hear of the many details in regard to these matters. I could bring you nothing new in regard to treatment; I could bring you no new theories in regard to infection; I could bring you no new hope for the ultimate complete eradication of the disease, and yet I thought of something that is new, and it is important, in which you, as physicians, have an interest, that has developed during the last two years. I refer to the development of two new kinds of tuberculosis clinics. You are familiar with the tuberculosis clinic connected with dispensaries or a part of out-patient departments of hospitals, but there are two new forms of clinics which are called "occasional, travelling or itinerant clinics" as to one and "tuberculosis consultation clinics" as to the other.

Until recently I was connected with the Tuberculosis Committee of the State Charities Aid Association of New York. Government Examining Boards were finding many cases of hitherto unknown tuberculosis and it was thought, on account of the stress of war that there would be the development of many new cases. The State Charities Aid Association took steps to aid in finding cases of tuberculosis. There were dispensaries, there

were clinics, but there was a gap which was not filled by any agency, that was the need in rural districts or country districts of expert examinations of the chest. There was no one in the rural communities, or in the small towns, to do that work and it was to fill that need that the committee organized what were called "Occasional Clinics" because they were held occasionally. They were also called "Travelling Clinics" because they travelled about all over the State. In order to hold such a clinic it was necessary to have a small amount of money, a tuberculosis nursing service and an expert diagnostician. The committee through its local sub-committees furnished these things for the communities where they did not exist. They supplied funds; they supplied nurses where there were none and they furnished the expert diagnostician. The experiment was first tried in Westchester County, which runs along the Hudson to the north of New York City. This county was selected because it was near New York and it was possible to obtain an expert from the city to act as diagnostician at the clinics. The results were extremely satisfactory. These clinics were advertised broad-cast in the newspapers, churches, theatres, movie houses, etc., and an effort was made to have as many as possible come for an examination. The work was taken up by the State Department of Health and developed and carried on throughout the whole of New York State.

I put in two years of my time acting as examiner for these clinics. For the most part the communities were small, less than 10,000 in population. We found in these small communities and in the rural districts an astonishingly large amount of active tuberculosis, a very considerable proportion of which was under no supervision. We found case after case well advanced in the disease which was under no medical supervision at all. As a

* Read before the Providence Medical Association,
November 1, 1920.

result of these clinics, many cases were sent to tuberculosis hospitals. New York has only one State Sanatorium, but it has numerous County Tuberculosis Hospitals. We succeeded in getting a considerable number into those hospitals. Criticism was made of the clinics in that there were no facilities for X-ray examination and that they were not sufficiently followed up. In other words, the clinic would be held and then move along to another community and not come back. We tried to offset that by establishing a follow-up system with nurses to come in afterward and follow up the cases which we found at the clinics. Now those clinics are supplied with a portable X-ray so that it is possible to take X-rays at the time of the clinic, and the films are afterward developed.

The "travelling clinic" has been established throughout the West. Everywhere they have been successful. A further development, a more precise clinic, is the "tuberculosis consultation clinic" which was really first developed at Framingham as a part of the Tuberculosis Experiment. You know very likely of Dr. Bartlett's work there as Chief Examiner. They induced 12,000 of the total population of 16,000 to come in for thorough and complete examinations. They found cases of tuberculosis which had not previously been found by any one at all. They found in their examinations in Framingham that for every death from tuberculosis there were nineteen living cases, nine of which were active cases, and ten were old healed cases which probably never had been very active, but which had sufficient signs so that it was possible to recognize that tuberculosis existed at some time. They brought up the question, "Why are these cases being missed?" They tried at Framingham to fill that gap by establishing the "Tuberculosis consultation clinic." That is a clinic attended by a recognized tuberculosis man, a man not in practice in the community, so that the physicians of the community have no hesitancy in sending their cases to him for consultation. The consultations and examinations are entirely free. In most cases the physician comes with the patient. Dr. Bartlett, in a great many cases, is able to point

out to the physicians some point in diagnosis which the physician has overlooked. The diagnosis of tuberculosis is not always easy. It is not easy in the early stage and sometimes in more advanced stages. Sometimes errors are made in calling persons tuberculous who are not. Sometimes it is a chronic pulmonary disease of some kind, which has followed influenza possibly, which is not tuberculous.

I have seen, within the last two weeks two cases closely simulating tuberculosis which followed influenza a year ago, in which it is extremely difficult to say that the person is tuberculous or that he is not tuberculous. Similarly we are seeing cases of chronic disease of the lungs following gassing abroad. There is rather a large number of these gas cases. I have examined in my office fellows who have been gassed, who have some kind of pulmonary disease. It closely simulates pulmonary tuberculosis in a great many ways, and yet it is not. It is hard to tell in some instances whether the person with a disease which is moderately advanced is tuberculous or not. The "consultation clinic" in Framingham is held by an expert who has had large experience in tuberculosis and has proved of great aid to the physicians of Framingham in finding cases of tuberculosis, and the idea has been copied throughout Massachusetts and in some of the other States. In Massachusetts it is now the duty of some of the superintendents of the County Sanatoria to act as free tuberculosis consultants for their particular counties. In New York that plan has been adopted in some of the County Tuberculosis Hospitals. New York has gone a little further. The New York State Department of Health has established a series of "Group Consultation Clinics." They have not only a tuberculosis man, but they have a venereal disease man and a heart man, and a general medicine man. They have four men in their group. I have tried here in Providence to establish the Tuberculosis Consultation Service as a part of the program of work of the Providence Tuberculosis League.

Recently I sent to the physicians of Providence a circular letter stating that we have

established this service, which is free to all physicians of Providence, and which is not intended to interfere with the private practice of any physician, but is solely to offer assistance to any physician who may need it or want it in early cases, suspected cases or doubtful cases.

The work of these two new clinics has developed the fact that an enormous number of cases of tuberculosis are not under supervision by doctor or nurse or any one else.

I came over to Providence the first of April, and when it became noised about that I was here, people began to come in to the office of the Providence Tuberculosis League for examination. Some days one or two and some days three or four, often none at all. Some of these people have had no physician at all and some I found to be actively tuberculous.

Dr. Richardson has told you about the number of vacant beds at Wallum Lake and the Providence City Hospital. Wallum Lake, with a capacity of 380 beds, has had an average of 100 vacant beds for the last year; the Providence City Hospital, with a capacity of sixty beds for tuberculosis, has had an average of twenty or thirty vacant beds for the same period. People are getting bigger wages and will not go to the hospital as long as they can get \$30 or \$40 per week. I had an instance of this recently when a man came to my office. I urged him to go to the hospital. He said, "My wife is working in the mill making \$35 per week. I don't have to go to the hospital." He would have care in the hospital which he cannot get at home. We have these cases who need hospital care, and we have a large number of vacant beds. How shall we get them in? Those who have been in tuberculosis work for a long time have found this out—that about one-third of the patients, who ought to go to tuberculosis hospitals, will go there. You can drive but about one-third to the hospital. The other two-thirds won't go. How can we get them to go? In the first place, how can we find them? In Providence we have our tuberculosis dispensaries, our tuberculosis clinics,

maintained by hospitals and by private agencies, and we have now the "tuberculosis consultation service." How are we going to reach these cases, in the outlying towns. I think we should advocate the establishment of consultation service in the larger centres of the State, which should be attended by the superintendent of Wallum Lake, or one of his assistants, as examiner. Physicians will bring patients to the superintendent, who is not in private practice to compete with them.

In Massachusetts the four State Sanatoria started on the first of September to hold these "tuberculosis consultation services." Each Sanatorium has four of the principal cities in Massachusetts. The Superintendent or his assistant goes to each of the four cities weekly in turn. Thus in sixteen principal cities of Massachusetts there is now established this free "tuberculosis consultation service," attended by the superintendent or his assistant. I have no doubt that it will serve to fill the vacant beds in the hospitals of the State. I advocate the establishment of the "tuberculosis consultation service" in the larger centres of Rhode Island. It is in this way, through this larger use of clinics, that we may hope to fill our hospitals. You may say "Why do you want to fill them? If they are not full, you might as well shut them up." The superintendent of a large institution like Wallum Lake knows that having 100 empty beds is a serious drag on his maintenance account. There are at least two good reasons why the hospitals should be filled. First, for the good of the patients who ought to go there and of their community, and second, for the reduction of overhead expenses of the hospitals.

I feel that this is not very much of a plea for the wider use of clinics and for the wider use of hospitals, and that my text is perhaps a misnomer. After Dr. Richardson received the title of my paper, I thought that perhaps an account of these "occasional clinics" and of the "tuberculosis consultation service" would be of fully as much interest as a strict adherence to the title.

DISCUSSION OF DR. WASHBURN'S PAPER.

DR. H. L. BARNES, Wallum Lake, R. I.—There must be over 1000 new cases of clinical tuberculosis develop in this State each year to maintain an equal number of deaths, and yet Wallum Lake received barely 500 new cases yearly, or only half of this total. Only half of those who come, or one-quarter of the total, have some prospect of arrest. If we consider that about a third of all cases are of a virulent type which progress steadily toward a fatal termination, even though promptly diagnosed and treated in sanatoria and that many cannot or will not remain long enough to secure permanent arrest, it will be seen how great are the sanatorium handicaps.

If we suppose that the sanatorium, nevertheless, saves fifty persons yearly, this amounts to only five per cent. of the 1000 deaths, leaving the other ninety-five per cent. of the death rate. Yet fifty persons saved yearly is a great gain from the humanitarian standpoint and an economic return which will justify the investment.

How much hospitals for advanced tuberculosis can lower the tuberculosis death rate, we cannot tell. We know that segregation is very efficient in controlling tuberculosis in cattle, but we cannot segregate human beings like cattle because our present conception of liberty sets a higher value on the pursuit of happiness than the pursuit of health. Cattle have no votes, and can, therefore, be made to conform to health rules. Many believe that the lower death rate from tuberculosis in England as compared to other countries has resulted from segregation and it is rational to believe that the removal of consumptives from families of young children may prevent mass infection in many instances. There are so many patients who cannot receive adequate nursing care at home and so many that have no real home that institutions are badly needed even though they never improved the patients or lowered the death rate.

In order to be effective, our institutions must be used and it may be of interest to compare our progress toward hospitalization of tuberculous patients in Rhode Island with that of our neighbors in Massachusetts and

Connecticut. Connecticut has 940 beds in State, Municipal and private tuberculosis hospitals and sanatoria. She is filling 800 of these beds, or which means one hospitalized consumptive for every 1725 of the population. Including private sanatoria, Massachusetts furnishes 3162 tuberculosis beds and fills about 2879 or one for every 1337 persons. Rhode Island has 535 tuberculosis beds, but is only filling 385, or one for every 1570 people. Our hospitalization is slightly better than that of Connecticut but we must do seventeen per cent. better than we are doing before we can equal the Massachusetts record. All of our four institutions caring for tuberculosis cases have from twenty to thirty per cent. of empty beds and there are in all, 150 empty tuberculosis beds or twenty-eight per cent. of our total. It is of interest to note that the Framingham experience indicates a need of two institutional beds for each death or over three times what we now have in Rhode Island.

The time patients will remain in sanatoria affects the amount of hospitalization almost as much as the number of admissions. Nearly all sanatoria fail to hold their patients long enough but there is not much difference in this respect in the State Sanatoria. Most cases with positive sputum need a full year, while negative sputum cases may not need half as long. Unless there is a preponderance of children, sanatoria rarely hold them half long enough.

The value of clinics and special consultation service in the discovery of tuberculous patients was well shown at Framingham where previous to the demonstration only 10 cases of tuberculosis were reported yearly, while after the establishment of a clinic and consultation service with physicians of the community, about three times as many were reported. Of course, we cannot expect to achieve the Framingham result without the Framingham organization and money, but the establishment of Dr. Washburn's consultation service should be a step forward.

The tuberculosis work of the city of New Bedford is worth noting. With 122,000 people, they are hospitalizing 115 consumptives which is equivalent to 569 in Rhode Island.

About ninety per cent. of the New Bedford Sanatorium cases come from the tuberculosis clinic, where 4000 cases are examined yearly.

In 1910, I sent out a questionnaire which almost every physician in Rhode Island took the trouble to answer. There were only 737 tuberculous patients under the care of private physicians at that time. If we include all that were in institutions, there were only 1000, and we know that this could not have been a third and perhaps not a tenth of the patients that needed advice. These figures show that tuberculous patients tire of the physician's care just as they tire of institutional care. There are thousands of them drifting on in this way without physicians' advice, and for this class, tuberculosis clinics are of great value. Rhode Island has a dense population favoring intensive work and more hospital beds at our disposal than most places. We physicians should rise to our opportunities.

NECROLOGY

RHODE ISLAND MEDICAL SOCIETY.

From December, 1917, to November, 1920.

The number that precedes each name gives the year of election to the Society.

The names are arranged by alphabetical order and those of past members are added.

CHARLES H. LEONARD,
WILLIAM R. WHITE,
BENJAMIN F. TEFFT, JR.
Committee on Necrology.

HONORARY MEMBER.

RAMON GUITERAS, M. D.

Doctor Ramon Guiteras of New York city, who was elected an Honorary Member of the Society, died December 13, 1917. His obituary was published in the RHODE ISLAND MEDICAL JOURNAL, April, 1918, page sixty-eight.

DECEASED FELLOWS.

1876—EDWARD STILES ALLEN, M. D.

Doctor Allen was born in Providence, August 9, 1855, son of Edward Stiles and Laura S. (Slack) Allen. Graduated at Bellevue Hos-

pital Medical College in 1876 and "pursued studies in Rhode Island Hospital." Doctor Allen was elected a Fellow of the Rhode Island Medical Society in June, 1876. He also became a member of the Providence Medical Association, and was the Secretary, 1878-80. He was a devoted student of art—did etchings and watercolors—and was a member of Providence Art Club, and the A. E. Club. He died in Providence, March 28, 1919.

1895—JAMES MORTIMER BODWELL, M. D.

Doctor Bodwell, for nearly a quarter of a century a successful practicing physician in Phenix, R. I. He was born in Solon, Me., April 13, 1868, and he was nearly fifty-two years old when he died at Phenix, in the town of West Warwick, March 25, 1920. He received the degree of Doctor of Medicine at Bowdoin in June, 1894, and the State Certificate in Rhode Island in July, 1895, having been for a year an interne at the State Institutions at Howard. He was elected a Fellow of the Rhode Island Medical Society in March, 1895; he also became a member of the Kent County District Society. He was "a man faithful to his patients and a good, conscientious physician, always attending to his duties and loved by all."

1908—WILFRED WARPOOL BROWNE, M. D.

Doctor Browne was born at Somerset, England, November 3, 1865; died at Woonsocket, January 29, 1918. He was a member of the Woonsocket District Society and joined the State Society in 1908, and was a member of the American Medical Association. A graduate of Baltimore Medical College, he became resident physician in Baltimore City Hospital and was in practice in Blackstone, Mass., for fifteen years before he settled in Woonsocket, as a specialist in diseases of the stomach and intestines.

1903—WILLIAM HENRY BUFFUM, M. D.

Doctor Buffum died in Liverpool, England, October 13, 1918. He was born in Providence, June 25, 1877. He attended the Mowry and Goff School and graduated at Brown University in 1898, and of the Harvard Medical School in 1902. After an internship in the Massachusetts General Hospital he began practice in this city. He served a half year as in-

terne at the Providence Lying-In Hospital and later was on its visiting staff. He served the Rhode Island Hospital as medical externe and in the Out Patient Department for Children's Diseases. In July, 1912, he was made house physician for the new Clinical Department for infants with diseases of the digestive organs. He was deeply interested in the treatment of infants and children and it has been justly said of him that he was "wondrously kind and sympathetic, always ready with cheering words, and the tiniest patient never feared him." Early in the World War he became a Senior Grade Lieutenant in the Rhode Island Base Unit. He served in the Newport Naval Hospital and sailed for Europe, September 25, 1918, landing in Liverpool, ill with influenza on October 8, five days before his death, in the Great Western Navy and Army Hospital. He is survived by his wife and one son, and his mother and a brother. Dr. Buffum was a man and physician, loving and beloved. With unselfishness and patriotism he left family, home and all interests here to go wherever called to aid his country. How wonderful the spirit of it; how great the loss to humanity of so splendid type of manhood! How great our privilege to remember him as friend and brother, as one of us who was first to give his life in the great cause. Let us be ever mindful of the lessons taught by his life and character, his work, his supreme sacrifice.

1898—FRANKLIN ELISHA BURDICK, M. D.

Doctor Burdick died in Providence, December 26, 1917, of angina pectoris. He was born in Fernwood, Oswego County, New York, March 31, 1871. He attended Pulaski Academy at Pulaski, N. Y., and graduated in medicine at Syracuse University in 1895. After an internship in St. Joseph's Hospital, Syracuse, he came to Providence and continued in general practice to the time of his death. In June, 1897, he became a medical externe and in October, 1905, he was appointed out patient physician and in January, 1916, assistant visiting physician to the Rhode Island Hospital. He was also a physician to the St. Elizabeth Home. He was a Mason, an Odd Fellow and a member of the University Club. In 1898 he married Miss Lena G. Goodspeed of Providence, who died in

1900. He is survived by his parents and one brother. Dr. Burdick was essentially a physician of the people and his death caused deep sorrow throughout the community. He had nearly completed a year of official service as president of the Providence Medical Association.

1881—FRANK BOUTELLE FULLER, M. D.

Doctor Fuller of Pawtucket was born in Wilton, Me., August 28, 1853. He died at Pawtucket on January 23, 1920. He was a graduate of Bates College, at Lewiston, Me., in 1875, and of Harvard Medical School in June, 1878. He was elected a Fellow of the Rhode Island Medical Society, March 16, 1881, and in the same year became a member of Providence Medical Association. Doctor Fuller took an active part in each of these medical societies and valuable papers contributed by him are published in the *Transactions of the State Society*. He was president of the Providence Medical Association in 1893, and for the year 1908-09 was president of the Rhode Island Medical Society, and after holding the office a year in each, he declined the nomination for a re-election. An appreciative tribute to the memory of Doctor Fuller was printed in the April, 1920, number of the JOURNAL, page seventy-eight. He was also a member of the Pawtucket District Society, the American Medical Association, and the Harvard Medical Alumni Association. For six years he was Medical Examiner for Pawtucket under appointment by the Governor of the State. He was also examiner for several of the leading life insurance companies of the country.

1882—HENRY KELBY GARDINER, M. D.

Dr. Gardiner of Wakefield, R. I., was born in Pawtucket, April 27, 1857; died in Wakefield, R. I., April 30, 1920. A sketch of Doctor Gardiner is given in the records of the Washington District Society, in the October, 1920, number of the JOURNAL, page 200.

1883—CLARENCE MILES GODDING, M. D.

Dr. Godding was born in Providence, July 27, 1857; he died in Providence, May 28, 1920. He received the A. B. degree at Brown University in 1878, and the A. M., later. Doctor Godding graduated at Harvard Medical School

in 1883, was an interne at Massachusetts General Hospital, 1882-83, and received an election to Fellowship in the Rhode Island Medical Society in 1883. He became a member of the Providence Medical Association in 1884. He also was a member of the American Medical Association. In the year of 1883 he was appointed surgeon to the Out Patient Department of the Rhode Island Hospital, and in 1889 received the appointment of visiting surgeon, which office he filled until November, 1904, when he resigned. To Doctor Godding should be accorded the honor of having won a triumph for asepsis in the Rhode Island Hospital. On his taking up his work as visiting surgeon, following an old line Army surgeon, "the wards were full of pus; on turning over the service to his successor there wasn't a drop of pus there." Doctor Godding was for many years the visiting physician to Dexter Asylum, and after that consulting physician. He was also for years a visiting physician at the Providence Lying-in Hospital and later was one of the consulting physicians. Dr. Godding met with accidents and with repeated illnesses and finally died of chronic myocarditis in his sixty-third year.

1906—ROBERT CARLETON HALE, M. D.

Dr. Hale was born in New London, Conn., March 31, 1880 and died in Providence, September 30, 1918, of influenza. Doctor Hale received the degree of Doctor of Medicine at Tufts College in 1901, where he was for a time assistant demonstrator of anatomy. He served for a short time in the Out Patient Department of Boston City Hospital, and as a substitute interne at Carney Hospital. He was elected to membership in the Providence Medical Association in 1904 and in 1906 became a Fellow of the Rhode Island Medical Society. His office was at 1447 Broad street, Providence.

1875—GEORGE DALLAS HERSEY, M. D.

Doctor Hersey was born in Foxboro, Mass., August 12, 1847, and died in Summerville, S. C., September 28, 1919; A. B., Brown University, 1896; A. M., 1872; M. D., University of City of New York, 1874. An interne for a year in Hartford Hospital, Hartford, Conn., and from 1875 to 1913 in the practice of his profession in Providence. From October, 1878,

to January, 1888, surgeon to the Out Patient Department, Rhode Island Hospital; October 2, 1887, elected visiting surgeon, and served until his resignation because of the age limit rule, in September, 1908. Secretary, Rhode Island Medical Society, 1881-1887; President for two years, 1899-1901; Librarian, 1879-1912. "To Doctor Hersey, far more than to any other man, the Rhode Island Medical Society is indebted for its excellent library." For the thirty-one years, from 1881 to 1911, he edited the Transactions of the Society with painstaking care and keenly critical skill. A memorial sketch of Doctor Hersey is given in the RHODE ISLAND MEDICAL JOURNAL for February, 1920. In the more than 100 years of its history the Rhode Island Medical Society has probably never had among the more than a thousand physicians enrolled in its membership, any Fellow who can be said to have devoted more time or rendered a more efficient service to the Society than did Doctor George Dallas Hersey. "The library is Doctor Hersey's best monument."

1906—JOHN PATRICK HUSSEY, M. D.

Doctor Hussey of 161 Cranston street, Providence, was born in Albion, R. I., May 22, 1872. His preliminary education was in Holy Cross College, Worcester, and he received the M. D. degree at Georgetown University, D. C., in 1903. He was for a time resident physician in the Emergency Hospital, Washington, D. C., and a member of the outside staff of New York Lying-In Hospital. In 1906 he was elected a member of Providence Medical Association and joined the State Society in the same year. Doctor Hussey died in Providence on December 19, 1918, of acute indigestion and dilatation of the heart, at the early age of forty-six years.

1892—HARRY WALDO KIMBALL, M. D.

Major Kimball of the United States Public Health Service in Providence was born in Woonsocket, January 17, 1868, and died in Providence, March 28, 1920, at the age of fifty-two years. He was a graduate of Bowdoin Medical School in 1891 and settled in Providence. In 1892 he became a Fellow of the State Society and a member of the Providence Medical Association, of which he was President in 1919. He was a member of the Rhode Island Medico Legal Society, the American Medical As-

sociation, and of the American Dermatological Society. He was also a member of the Providence Clinical Club, the Medical Improvement Club, the University Club and the Bowdoin Alumni Association. For the year 1891-92 he was an interne at the State Institutions at Howard; in June, 1898, he was appointed externe to the Dermatological Out Patient Department of the Rhode Island Hospital, and in April, 1899, assistant surgeon; in December, 1900, assistant surgeon and in 1908 visiting surgeon in the dermatological service at the hospital, which office he held until his death. In 1892 he was assistant surgeon, and in 1893 brigade quartermaster in the Rhode Island Militia. He was a member of the Red Cross Unit that went to Halifax in the disaster of December, 1919, and at his death he had been for nearly two years surgeon with the rank of major in the United States Public Health service, with offices at the State House in Providence. Making a specialty of dermatology in private practice, he also attended for years the cases of smallpox at Field's Point and his services were widely sought for as an expert in the diagnosis of suspected cases of that disease.

1872—JOHN WAITE MITCHELL, M. D.

Doctor Mitchell, an ex-President of the Rhode Island Medical Society (1889-1891) died in Providence, February 27, 1919. He was born in Norwich, N. Y., April 6, 1848; was a student of Williston Academy, Easthampton, Mass., and was graduated in medicine at Bellevue Hospital Medical College in 1871. After an internship in Bellevue Hospital he began practice in Providence in 1872 and here passed the remainder of his most busy and useful life. He was easily one of Rhode Island's best known and most highly regarded physicians. For many years he was on the visiting staff of the Rhode Island Hospital, first as physician and later as surgeon. He was president of the Providence Lying-In Hospital Corporation. He was an incessant worker, giving himself few periods of recreation or travel. One who knew him intimately said of him, "In the home of the rich and poor, the learned and the ignorant, he was a calming and healing presence. He did not know how to rest." Dr. Mitchell is survived by his wife and one son, both residing in California.

Dr. Mitchell was a Fellow of the American College of Surgeons, and a member of the American Medical Association.

1905—JAMES LEE PHILLIPS, M. D.

Doctor Phillips, whose office was at 421 Cranston street, in Providence, was born in Foster, R. I., August 24, 1864, and he died in Providence, April 20, 1918, at the age of 53 years. He was a student at the East Greenwich Academy, was graduated at Harvard Medical School in 1892, and that same year received the certificate of the State Board of Health in Rhode Island. He first practiced for about a year, associated with the late Dr. Henry Arnold, at Foster Centre, and later was for eleven years with Dr. P. F. Walker at Parade and Cranston streets in Providence. He joined the Providence Medical Association in 1904, and in 1905 became a Fellow of the Rhode Island Medical Society. He was also a member of the American Medical Association. Doctor Phillips's death was from laryngeal diphtheria.

1879—JAMES EDMUND SULLIVAN, M. D.

Doctor Sullivan was born in Youghal, County Cork, Ireland, October 31, 1844, and died in Providence, R. I., October 8, 1920. He lived in this country from the time he was three or four years old. He was graduated at Bellevue Hospital Medical College in 1879, and in September in that year was elected a Fellow of the Rhode Island Medical Society. After two years in practice with his preceptor, Dr. Charles O'Leary, in Providence, he was for a number of years in Fall River, Mass., where for two years he was the city physician. Doctor Sullivan was married in 1885 to Miss Alice M. Banigan, a daughter of Joseph Banigan of Providence, and presently became engaged in the manufacturing business in Woonsocket where he was a director and an active officer in the American Wringer Company. In 1893 he resumed practice in Providence, devoting himself mainly to diseases of children. In 1895 he gave up practice to give his attention to large financial affairs but he continued his connection with the State Medical Society until the time of his death, and in 1901 became a member of the Providence Medical Association. From 1883 to 1889 he was a member of the Massachusetts Medical Society.

1880—HERBERT TERRY, M. D.

Doctor Terry, the son of Isaac and Jane S. Terry, was born in Fairhaven, Mass., December 8, 1854, and died in Providence, August 24, 1920, at the age of sixty-five years. He received the degree of Bachelor of Science from Cornell University in 1876, and in 1880 the degree of Doctor of Medicine from Harvard University. He had been house officer for four months at Boston Lying-In Hospital, in 1879, and in 1880 began practice in Providence. Providence was his home for the forty years of his professional life. In 1882 he was appointed physician to the Out Patient Department of the Rhode Island Hospital; in 1891, visiting physician at the hospital; and from 1901 on he was surgeon to Out Patient Department, genito-urinary diseases. From the organization of the Providence Lying-In Hospital in 1885 until 1903 he was one of the visiting physicians in that institution, and from 1903 was one of the consulting physicians. From 1883 to 1903 he was a visiting physician at St. Elizabeth Home, and later, consulting physician; and from 1881 to 1884 he was a physician to the Providence Dispensary, and then was appointed consulting physician. From about the year 1900 he devoted his attention exclusively to urology as a specialty. He was a member of the American Urological Association, a member of the New England Branch of that Society, and was also a Fellow of the American College of Surgeons. Doctor Terry was made a Fellow of the Rhode Island Medical Society in December, 1880, and in 1881 was elected a member of Providence Medical Association, and throughout his life in Providence was active in the work of these societies. From 1885-87 he was Secretary, from 1889-91, Treasurer, and for 1897-98, President of Providence Medical Association. At the time of his death he was First-Vice President of the Rhode Island Medical Society. He was also a member of the Providence Clinical Club, of the Providence Franklin Society, and of the Harvard Medical Alumni Association. Doctor Terry was recognized as an expert in his specialty—urology—to the study of which he had given much time, both in this country and in Europe. He excelled especially in the successful removal of vesical calculi and in proctatectomy. In his taking on cases and

in his charges for professional services Doctor Terry always exercised a kindly consideration for patients in humble or straitened circumstances. Doctor Terry arranged that his medical library should go to the library of the Rhode Island Medical Society.

1907—CORA GENEVA YATES, M. D.

Doctor Yates, the widow of Eugene S. Yates, was the daughter of George and Martha (Bennett) Elliott. She was born in Fisherville, now Penacook, N. H., August 16, 1852, and died in Pawtucket, September 23, 1918, at the age of sixty-six years. She was a graduate of the College of Physicians and Surgeons, in Boston, Mass., in 1891, and joined the Rhode Island Medical Society in 1907. Her office was at 321 Main street, Pawtucket.

NON RESIDENT MEMBER.

1885—SOPHRONIA ANN TOMLINSON, M. D.

Doctor Tomlinson was graduated at the Women's Medical College of Pennsylvania in 1878; had service for nineteen months in the Nursery and Children's Hospital, Staten Island, N. Y., and from 1880 to 1902 she was in practice in Providence, giving especial attention to diseases of children. Doctor Tomlinson was elected a Fellow of the Rhode Island Medical Association in June, 1885; in 1902 she removed to New Jersey but maintained her interest in the Society as a non-resident member. For the later years of her life her home was at Shiloh, Cumberland County, N. J. She was the daughter of Dr. George and Phebe H. (Mulford) Tomlinson, and was born in Roadstown, N. J.; December 17, 1838, and died at Shiloh, N. J., February 12, 1919.

PAST MEMBERS.

1910—LIONEL MAXIMILIAN ARCHAMBault,
M. D.

Doctor Archambault was born August 14, 1887 and died at Haverhill, Mass., June 6, 1919. M. D., College of Physicians and Surgeons, Baltimore. Doctor Archambault settled in Arctic Centre, R. I., and became a Fellow of Rhode Island Medical Society in 1910. He soon removed from the State and suffered his membership to lapse through non-payment of dues.

1876—CHARLES HARVEY DOUGLAS, M. D.

Dr. Douglas was born in Providence, April 17, 1851, and died in Los Angeles, Cal., August

2, 1918. He was for two years a student at Brown University in the Class of 1871. He received the degree of M. D. at Bellevue in 1876 and for 12 years was in practice in Providence. In 1888 he removed to California and was for many years in practice in Los Angeles, but for a time he was government dispensing agent in the Hawaiian Islands.

1869—DANIEL MANN EDWARDS, M. D.

Dr. Edwards was elected a Fellow of the Society in June, 1869, and was in practice with his father-in-law, the late Dr. Ariel Ballou, who joined the Society in 1832. By reason of serious deafness Dr. Edwards resigned from the Society in 1888, gave up medical practice and engaged in real estate business. He died in Woonsocket, June 6, 1919, at the age of seventy-five years. Dr. Edwards was born in Lincoln, Me., January 22, 1844. He attended public schools and Lincoln Academy, and in 1863 enlisted in the First Maine Regiment of Heavy Artillery in which he served until the close of the Civil War. He was graduated from University of Michigan, M. D., 1867, and settled in Woonsocket in 1869. In 1870 he married Miss Laura Ballou of Woonsocket.

1889—MARY LOUISE FARNUM, M. D.

Doctor Farnum was born in Woonsocket, April 23, 1863, and died in Portland, Oregon, December 31, 1917. She attended the Friends' School in Providence, was graduated at the Women's Medical College of Pennsylvania in 1886; located in Woonsocket and was in practice there until 1907; when she removed to Oregon. She was elected a Fellow of the Rhode Island Medical Society, June 13, 1889. She died at the Good Samaritan Hospital, Portland, Ore., December 31, 1917.

1874—JOHN RUGGLES GREENLEAF, JR., M. D.

Doctor Greenleaf was born in Ware, Mass., July 31, 1840, and died in Gardner, Mass., (his home since 1875) on June 8, 1919, of acute dilatation of the heart. He had attended the high school in Ware and after one winter's lectures at Buffalo, N. Y., attended those of the second winter at the College of Physicians and Surgeons in New York city, where he was graduated March 9, 1865. In 1871 he became a member of the Massachusetts Medical Society,

and in June, 1874, when he was located at Pascoag, was elected a Fellow of the Rhode Island Medical Society. He resigned in 1875 and after that until 1908 was in practice in Gardner, Mass. Through the failure of the Secretary to duly record his election to the Society Dr. Greenleaf's name does not appear in any published list of Fellows.

BOOK REVIEW

A MANUAL OF OBSTETRICS. By John Cooke Hirst, M. D., Associate in Obstetrics, School of Medicine, University of Pennsylvania; Obstetrician and Gynecologist to Philadelphia General Hospital; Obstetrician to St. Agnes Hospital; Gynecologist to Mt. Sinai Hospital; Gynecologist to American Hospital for Diseases of Stomach; Fellow of the College of Physicians, Philadelphia.

This book is just what it is entitled—A Manual of Obstetrics—a book of some 500 pages—well illustrated. As a book for the medical student or the busy practitioner it is a remarkably concise and a fairly complete review of obstetrics. Very little space is given to theory or the discussion of theoretical subjects, thereby making a very practical working manual. It is unique in that it presents a new classification of the deformities of the pelvis, classifying them according to their most prominent deformity. The author presents the mechanism of labor in a remarkably clear fashion and simplifies this unusually difficult problem by many illustrations so that the student can readily visualize the different positions of the child in the various steps of mechanism. The writer's chapter on Repair of Lacerations is especially good. He recommends, contrary to most writers, delayed repair of these lacerations. He selects the seventh day as the best time to repair, and advises against the immediate repair of the perineum for the following reasons: "(1) Accuracy of diagnosis is impossible; (2) the bruised and edematous tissues are not good material for repair; (3) the danger of infection is very much greater; (4) these repairs are often only the closure of the perineal skin with entire disregard of the muscular injuries; (5) failure is common, necessitating a second operation later." The author also, contrary to the custom of most obstetrical writers, includes the gynecological treatment of many conditions resulting from child birth, taking into consideration, as is perfectly proper, that these conditions are a part of an obstetrician's duties. The book ends with its largest chapter on obstetrical operations, in which by far the greatest space is given to the use of forceps.

B. H. B.

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EDITORIALS

CHANGE OF MANAGEMENT.

With this issue the present Editorial Board of the RHODE ISLAND MEDICAL JOURNAL ends its labors and transfers its burdens to other shoulders. The Committee on Publication has been fortunate in securing the services of Dr. Frederick N. Brown, who will serve as Editor for the coming year. The Rhode Island Medical Society is to be congratulated in having in this responsible position a man who has always worked hard and well for the best interests of the medical profession as a

whole without thought of reward. The present functioning of the Workmen's Compensation Act, so far as the medical profession is concerned, is in no small measure due to his indefatigable efforts to have the rights of physicians under this Act recognized. His patriotic efforts in securing subscriptions for the first Liberty Loan issue will not soon be forgotten by the local profession.

The present Editorial Board assumed office in 1917, when the bimonthly publication, *The Providence Medical Journal*, which had served the State, as well as the city, for seventeen years, was succeeded by the RHODE

ISLAND MEDICAL JOURNAL. In conformity with the requirements of the Coöperative Medical Advertising Bureau the JOURNAL has been issued monthly except for a period of sixteen months during the war and the reconstruction period. The JOURNAL is now well on its feet, both financially and with regard to available literary material. A bright future is before it so far as serving the needs of the profession in this State is concerned. It is our opinion that no one man should hold the position of Editor for any great length of time, and in laying down the pen which has been used freely and the blue pencil which has fortunately been used sparingly, we bespeak for our successor the hearty support of every medical man in this State. His position is hard enough as it is; do not make it harder by refusing any simple requests which he may make of any of you.

THE THREATENED SHORTAGE OF NURSES.

Since the entry of this country into the world war the public has become accustomed to frequent additions to the list of commodities—many of them classed as necessities—of which a shortage exists. The lack of dwelling houses and an insufficient coal supply have been engaging our attention. Now we must consider still another problem—the nursing situation. Throughout the country a shortage of trained nurses in private practice is threatened. During the next few years this promises to become rather more than less acute. The situation is a serious one. Two main factors are responsible for the condition. First and most important is the shortage of applicants for training in our large hospital training schools. The contrast between the arduous nature of the work of the pupil nurse and the comparatively easy and well paid existence of the young woman employed in a business office is doubtless a strong deterrent to many to whom the care of the sick might otherwise appeal as a life work. Training schools are meeting this difficulty as best they can by trying in every way to make the life of the pupil nurse more attractive and less exacting.

The second factor which reduces the number of nurses available for private duty is the large number of attractive positions in industrial work which are being offered to them. This development of industrial hygiene is good from every point of view and is receiving the hearty support of the medical profession. Nevertheless, one of its immediate by-effects is to remove from the list of those available for private duty the names of some of our most efficient nurses. Furthermore, other fields of public health nursing, such as tuberculosis and district work, are attracting more, rather than less of our hospital graduates.

We are facing, then, a condition of increased demand and a pronounced decrease in the supply.

The medical profession must aid in attempting to meet the situation. Young women must be encouraged to consider nursing as a career. In the hospital everything must be done to aid and encourage the nursing staff and to make the pupil nurses feel the dignity and value of their work. In private practice the same spirit of coöperation must be emphasized more than ever that the community may more completely realize the mutual feelings of respect that exist between doctor and nurse. In addition, every effort must be made to conserve our resources by discouraging the employment of graduate nurses on cases where their services are not really needed, when possible replacing them by non-graduates that they may be released for duty elsewhere.

Although just at the present time the absence of any great amount of acute infectious disease makes our supply of nurses amply sufficient, the recurrence of anything like the conditions of the last few winter seasons will be more serious than ever before, and we should be prepared.

HOSPITAL ABUSE.

The medical profession has ever been zealous to expose and to correct, so far as it has been able, hospital abuse, which usually takes the form of some abuse of the services offered by the hospital. In short, the hospital in this sense is looked upon as the party imposed upon, and it is therefore, a more novel

sensation to have the term "hospital abuse" refer to acts of the hospital which do not stand well the light of publicity. Such "hospital abuse" has recently come to our attention and we feel it our duty to protest as strongly against unjust acts by the hospitals as when the hospital is the sufferer. One of the hospitals in Rhode Island is entering into active competition with the physicians by the manner in which it is handling cases coming under the Workmen's Compensation Act. The officials of several large industrial concerns instruct their injured employees to go to this hospital, where they are treated by the resident physician. So far there can be no objection, but the hospital charges and collects for itself a fee for this service and instructs the injured man to return to the hospital for subsequent treatments, for which the hospital makes a charge. This is absolutely unfair to the physicians of the locality and not at all in the spirit of the Act. The visiting physicians are perfectly correct in refusing to allow these ambulant cases to return to the Accident Room for after care, and the hospital's attitude in fostering and encouraging its present system is indefensible.

DIPHTHERIA IN PROVIDENCE.

According to the Superintendent of Health there are too many deaths from diphtheria in Providence. There were eighty in 1917, fifty-six in 1918, seventy-seven in 1919 and up to October 31 of this year there were sixty-one. The case fatality runs from 7.6 to ten per cent. It has been claimed that, if antitoxin is given in sufficient doses on the first day of the disease, the case fatality will be only about one per cent. Indeed some claim that, if seen early enough, there should be no deaths. A fatality of two or three per cent. is often obtained in large series of cases.

Although there is no doubt that the chief factor in the high mortality from diphtheria in Providence is due to the neglect of parents in calling a physician, not a little blame attaches to physicians. Dr. Richardson, whose work at the Providence City Hospital has gained him an enviable reputation not only in this country, but abroad, forcibly called attention to this in an article which appeared

in the May issue of this JOURNAL. The first error, he says, is failure to make a diagnosis. Although diagnosis is not always possible on the first call, suspicion is *always* possible and the patient should *always* be given the benefit of the doubt. Another point Richardson insists on is that it is just as wrong to let a diphtheria case go without a visit for twenty-four or forty-eight hours, as it would be to thus neglect an "acute abdomen." Lastly, he says a large initial dose of antitoxin given intramuscularly, or intravenously is essential. Let us try and reduce the case fatality of this disease in Rhode Island this winter.

SOCIETY MEETINGS

RHODE ISLAND OPHTHALMOLOGICAL AND OTOLOGICAL SOCIETY.

At the annual meeting of the Rhode Island Ophthalmological and Otological Society, held in the University Club, Providence, October 13, 1920, the following officers were elected for the ensuing year: President, Dr. A. A. Fisher; Vice-President, Dr. C. J. Astle; Secretary-Treasurer, Dr. J. L. Dowling.

J. L. DOWLING, M. D., *Secretary.*

October 4, 1920.

PROVIDENCE MEDICAL ASSOCIATION.

The regular monthly meetings of the Providence Medical Association were resumed at the Medical Library on October 4, 1920, at 9 P. M. Dr. Frank T. Fulton presided in the absence of the President.

The records of the previous meeting were read and approved.

The applications of Drs. Carlotta Golini and Joseph L. Belliotti having been approved by the Standing Committee, they were elected, the Secretary being ordered to cast one ballot for both.

The application of Dr. Arthur J. Gagnon was read.

A recommendation of the Standing Committee was presented by the Secretary advocating the rearrangement of Section 4, Article IV. of the By-Laws so that "Reports of Cases and Presentation of Specimens" shall come just before the reading and dis-

cussion of papers in the regular order of business. A motion was made by Dr. William R. White, seconded by Dr. Jacob S. Kelly, that the recommendation be endorsed. After considerable discussion by Drs. Leonard, Hawkins, Mowry, Cooke, Fulton and Harvey, the motion was carried by almost unanimous vote.

Dr. A. T. Jones announced that the New England Surgical Society was to meet at the Medical Library in Providence, Rhode Island, on October 6 and 7, 1920, and extended a general invitation to members of the community to attend.

Dr. Carver read a memorial on the death of Dr. Herbert Terry, which was accepted and placed on file.

There being no further business, the paper of the evening (Relation of Focal Infection to Chronic Deafness) was presented to the Association by Dr. Francis C. Emerson of Boston, Massachusetts. This valuable paper, embracing the conclusions of the writer after many years' experience with chronic deafness, was discussed by Drs. H. P. Abbott, N. Darrell Harvey, and F. Nolton Bigelow, and was closed by Dr. Emerson.

After a rising vote of thanks to the speaker of the evening, the meeting adjourned at 10:30 P. M.

Attendance: 73 members and nine guests.
Collation was served.

Respectfully submitted,
RAYMOND G. BUGBEE, M. D.,
Secretary.

BOOK REVIEW

"THE NEWER METHODS OF BLOOD AND URINE CHEMISTRY," by R. B. H. GRADWOHL, M. D., and A. J. BLAIVAS; Second Edition; \$5.00; C. V. Mosby, Co., St. Louis, Mo.

This book of about 400 pages takes up in a very comprehensive manner the up to date technic of blood and urine chemistry and also devotes more than one half its space to the discussion and interpretation of blood sugar findings, acidosis, blood chemistry and nephritis, blood changes in gout, and basal metabolism.

It differs from the authors' first edition, published in 1917, in the substitution of newer methods of technic and facts of interpretation, keeping up with the changes and rapid advance in knowledge which is occurring in this comparatively new and useful field.

The laboratory directions are very explicit and are accompanied by numerous illustrations for assembling apparatus. The discussion, especially that of blood chemistry and nephritis, is well presented and is of a practical, as well as theoretical nature, useful to the general practitioner as to the specialist. I know of no other recent book of this type quite so well adapted to practical use as a laboratory guide. It is, however, in no sense an exhaustive reference book, as it covers only the most recent and approved methods of laboratory diagnosis, usually describing but one course of procedure for each test.

E. S. W.

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A Fellow of the Rhode Island Medical Society, who has always had the best interests of the profession at heart, has announced that he will give a prize of One Hundred Dollars to the reader of the best paper read before the Rhode Island Medical Society or the Providence Medical Association during the coming year. The officers of these Societies are to be the judges of the merits of the paper. The paper may be written upon any subject of medical interest and must be original.

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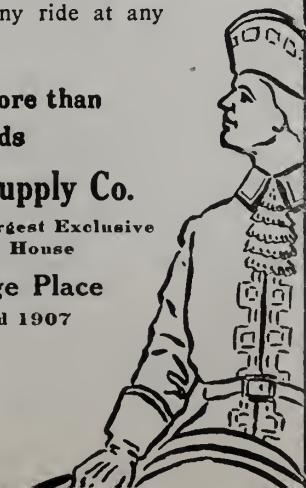
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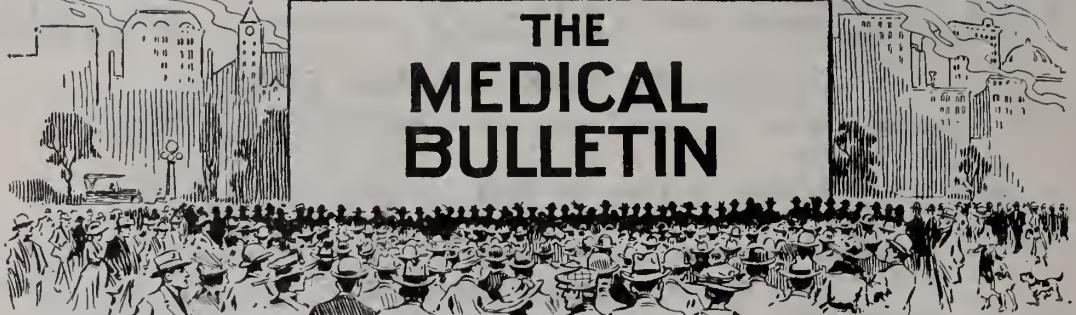
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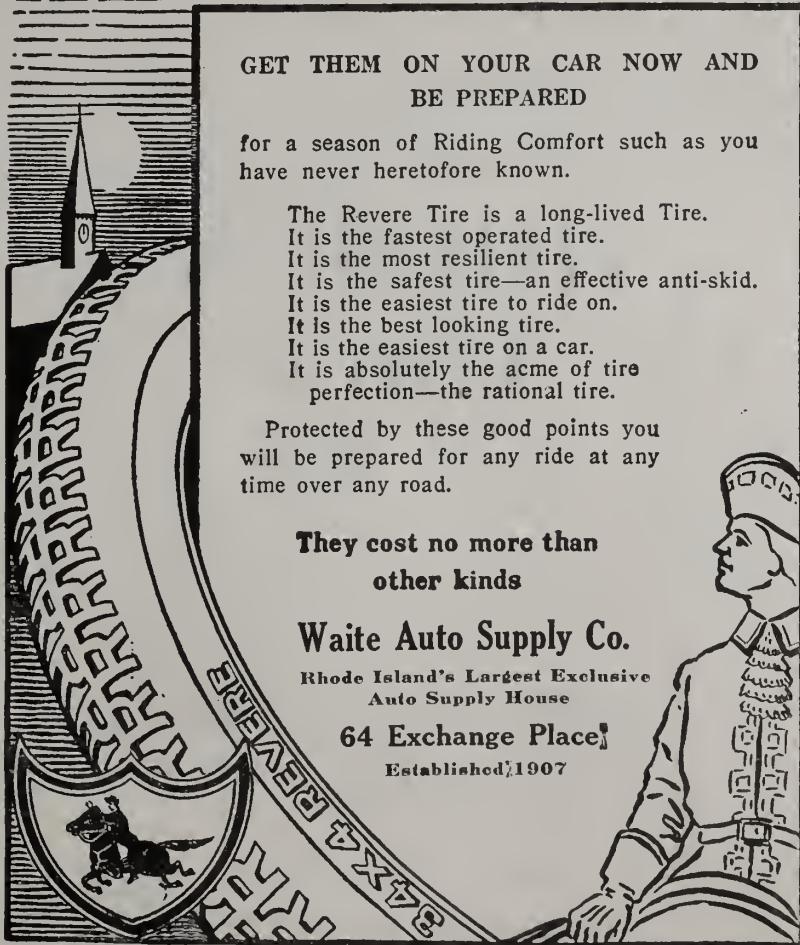
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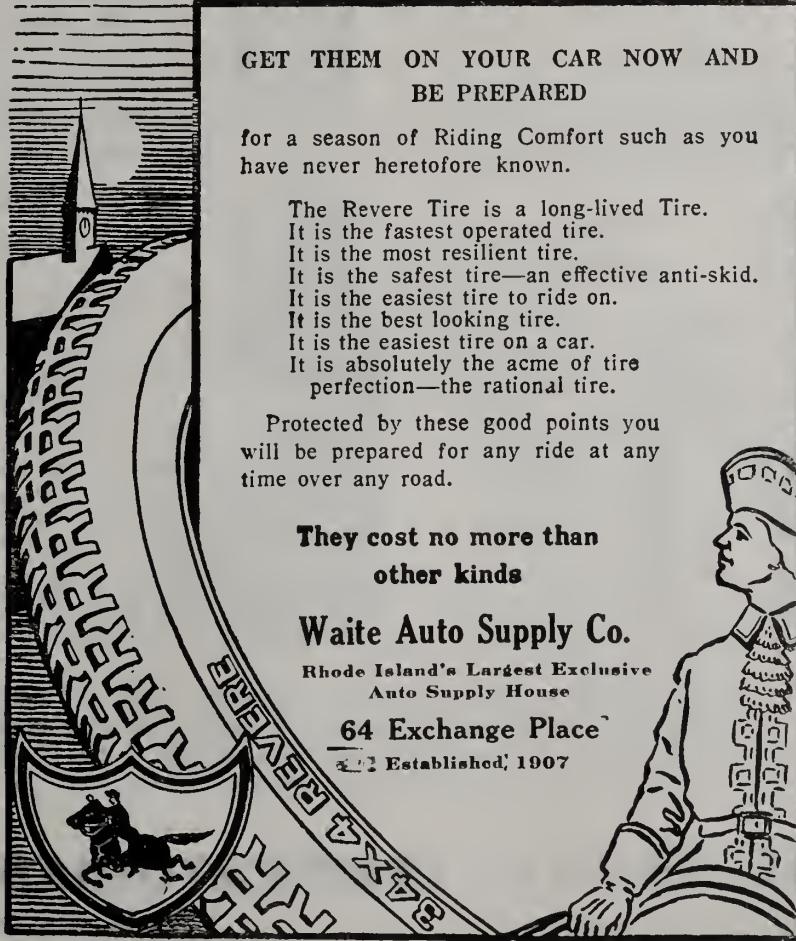
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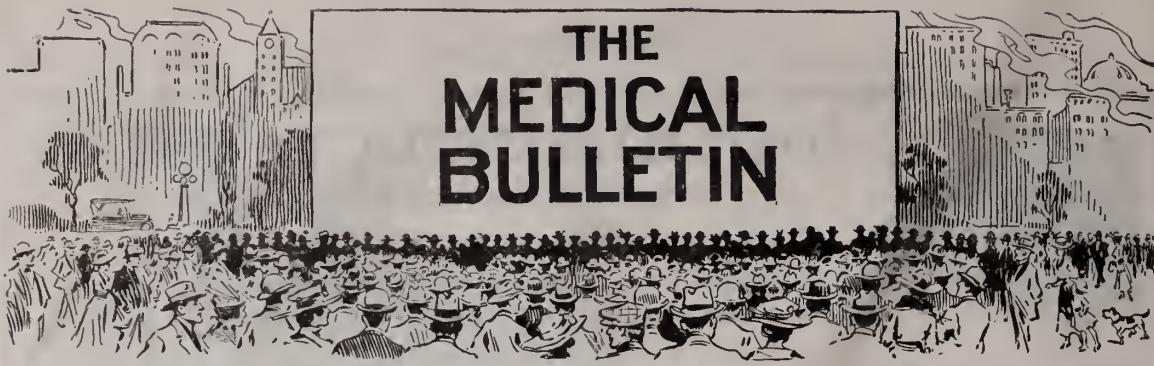
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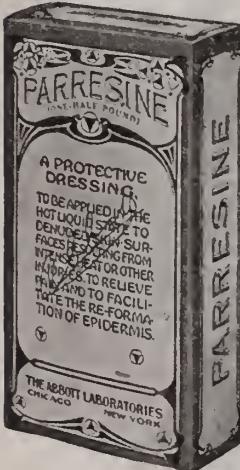


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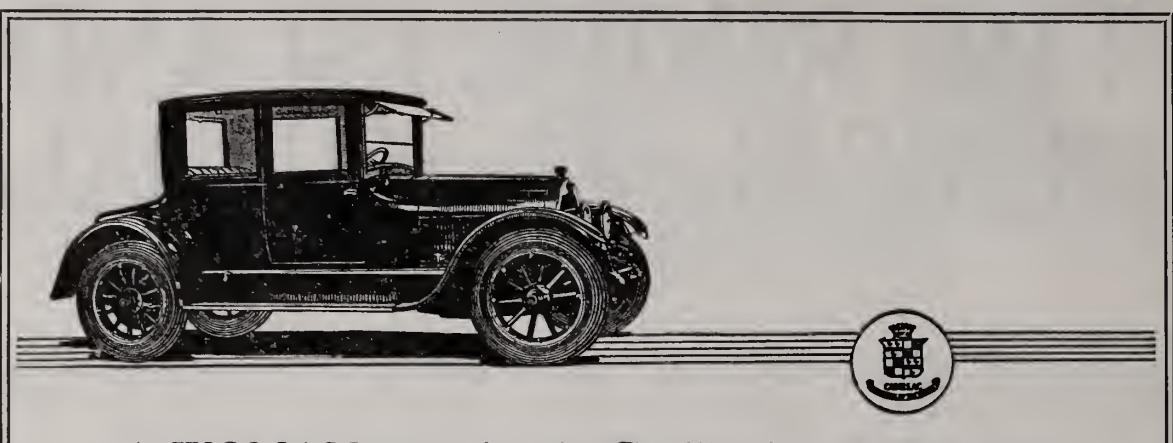
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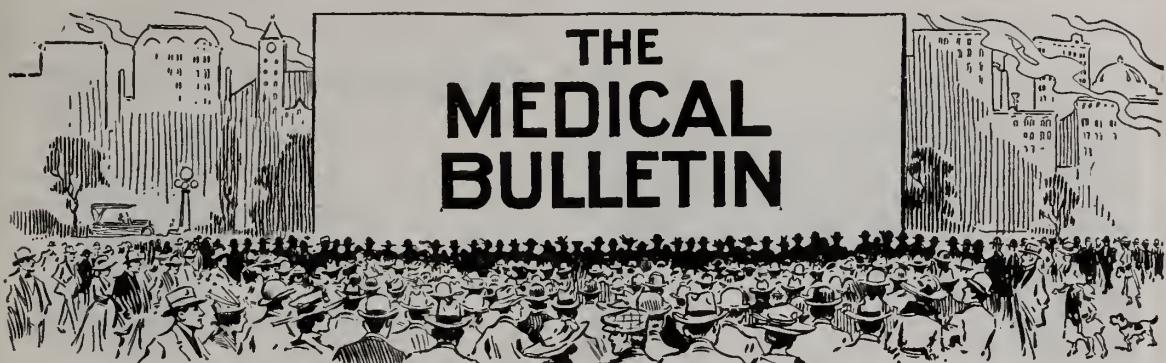
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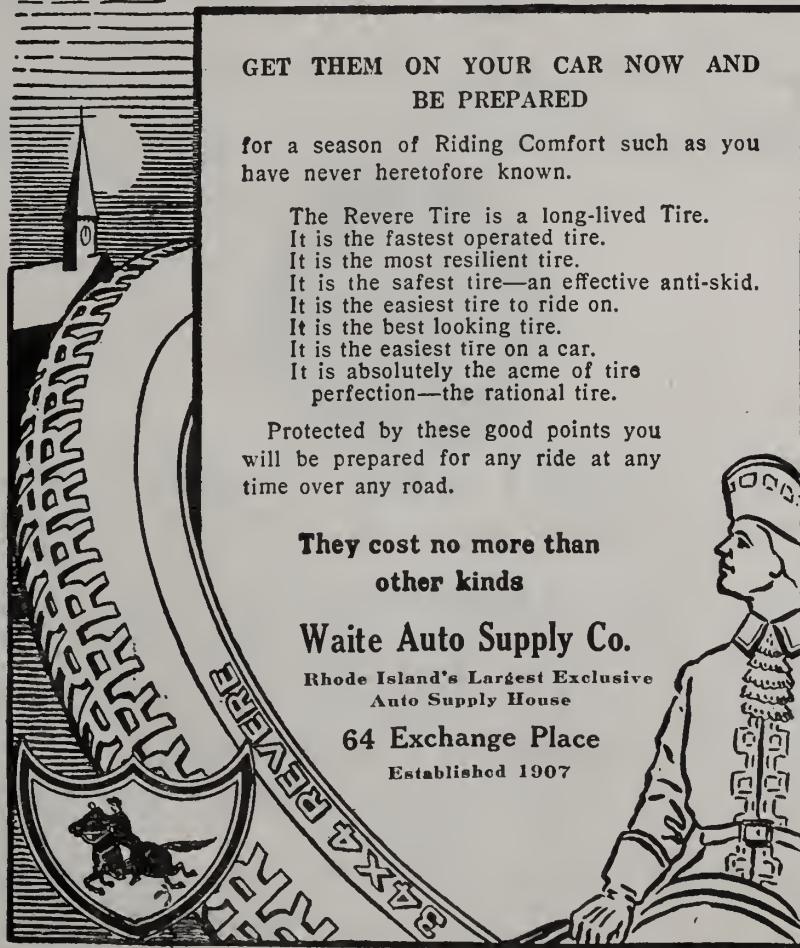
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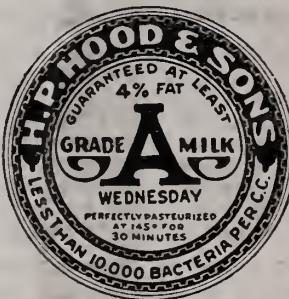
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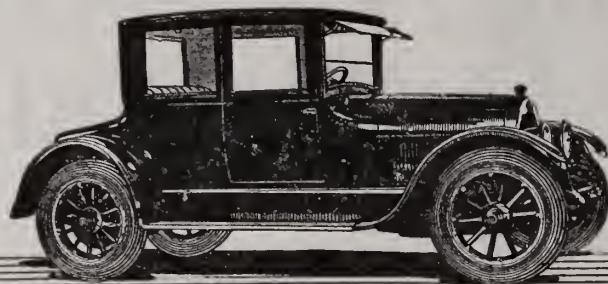
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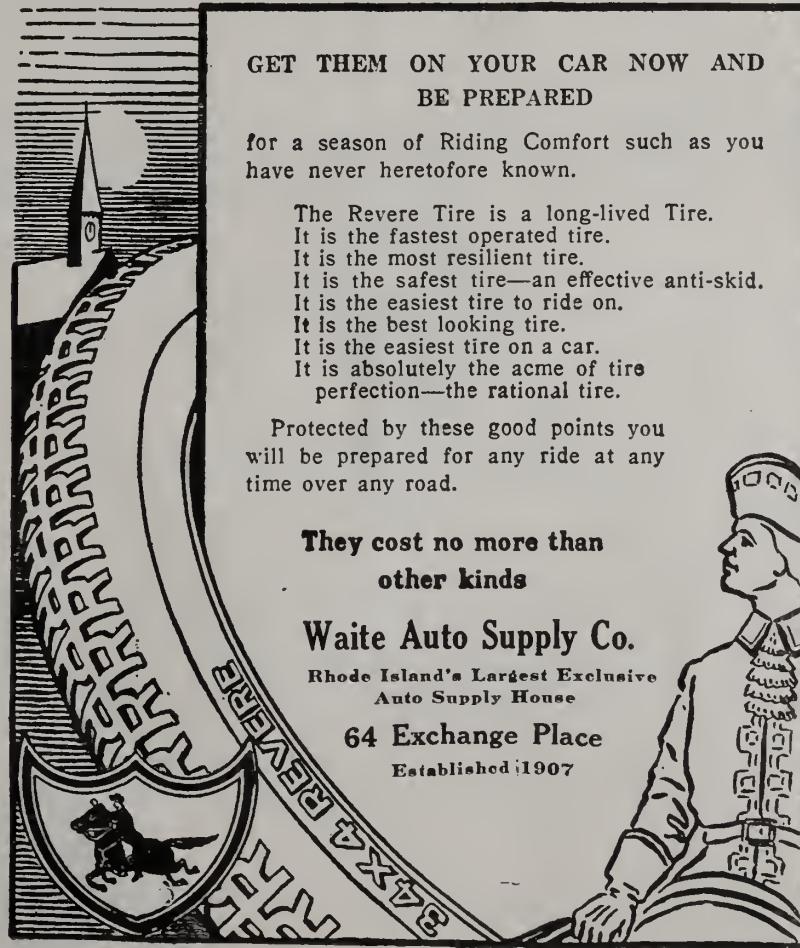
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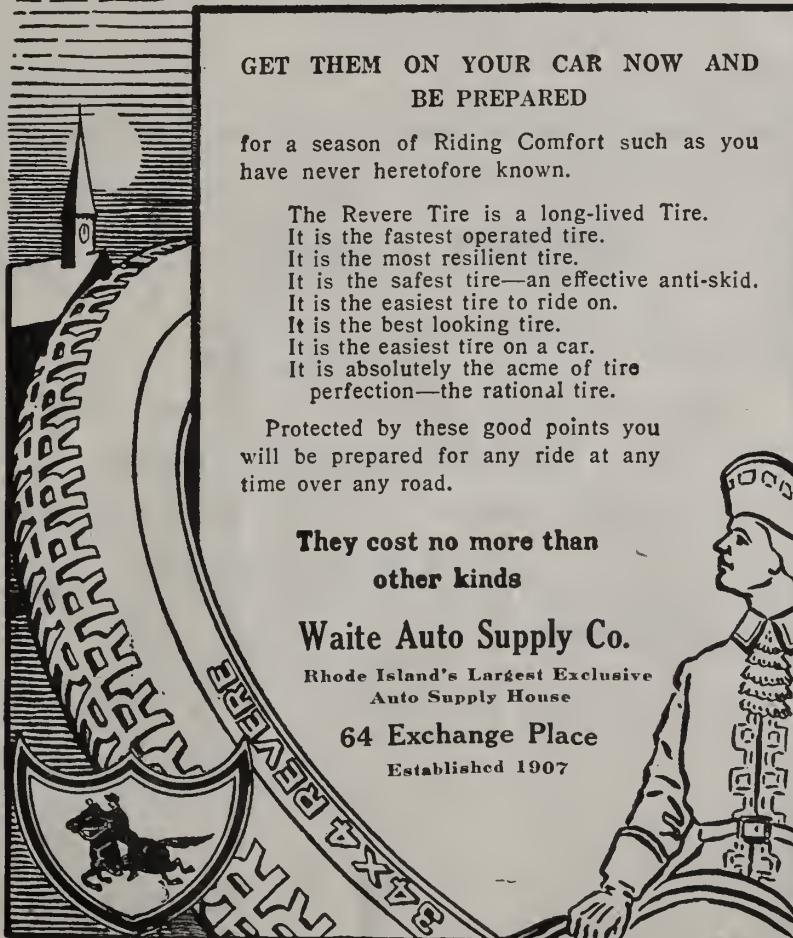
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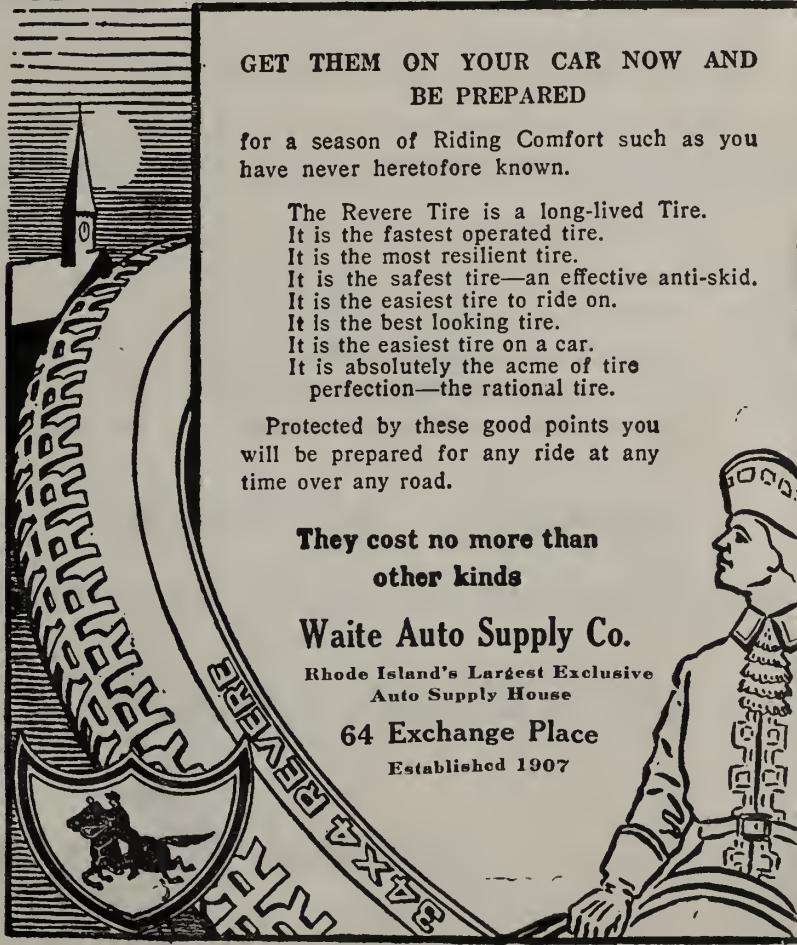
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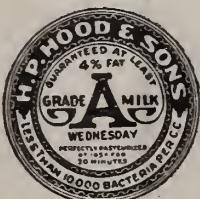
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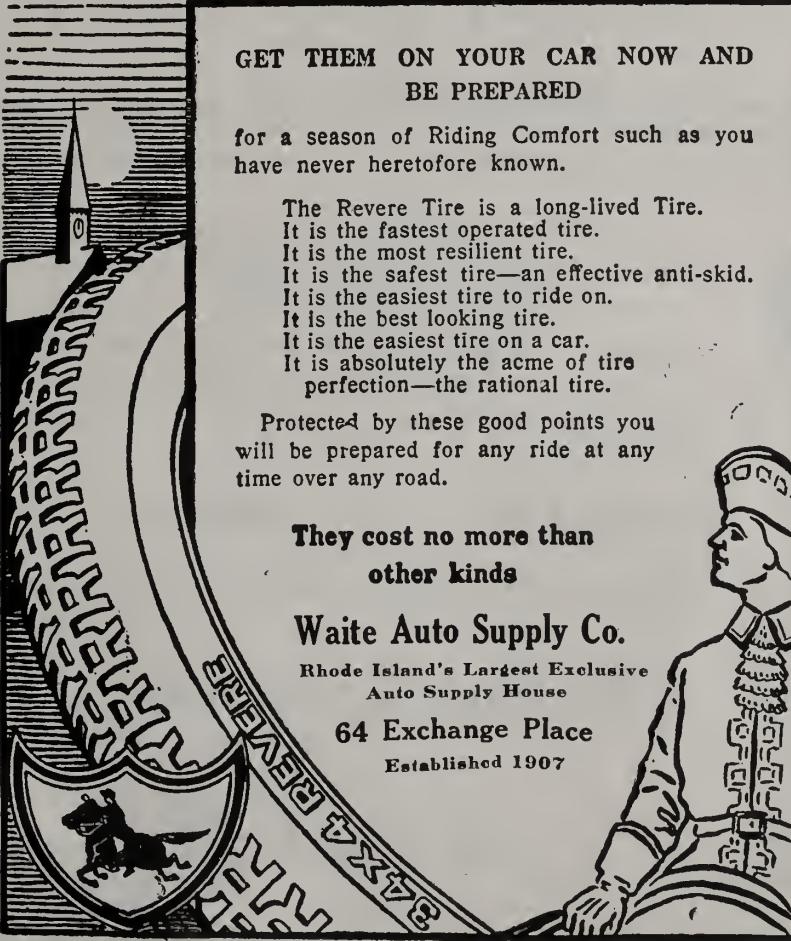
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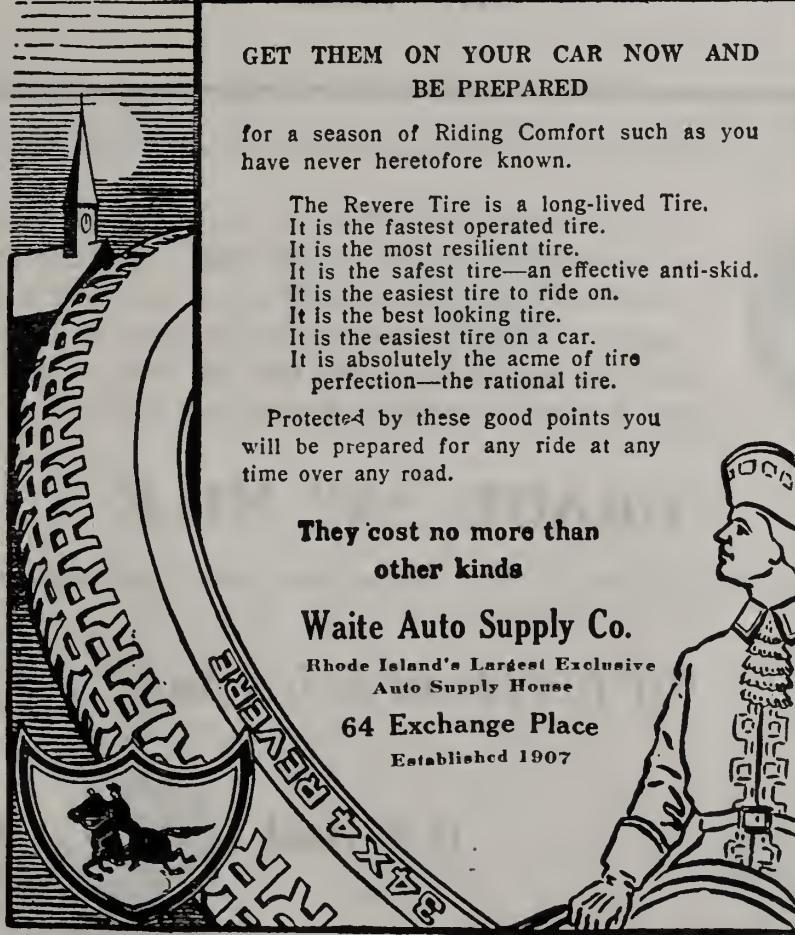
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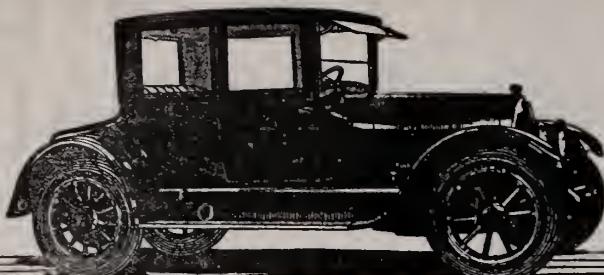
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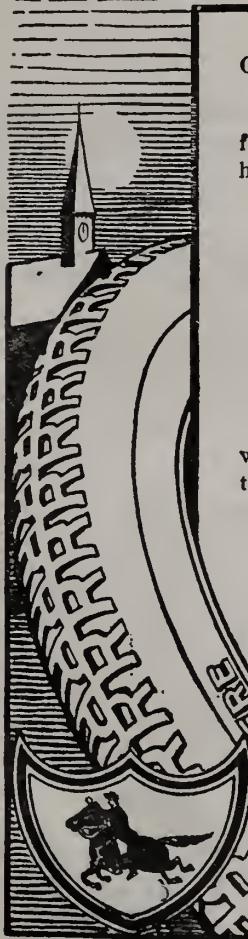
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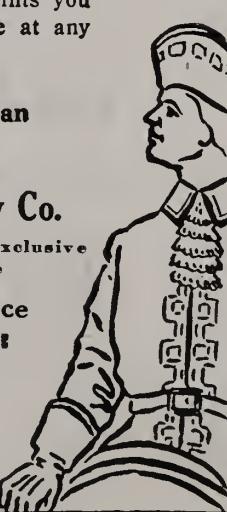
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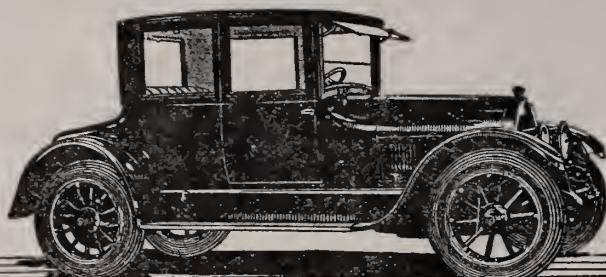
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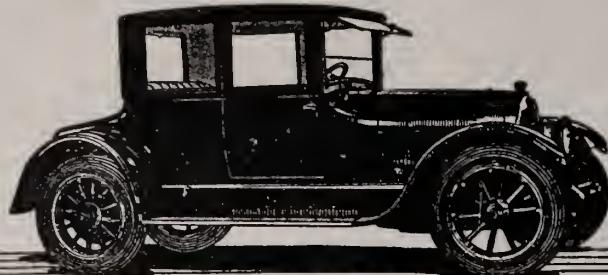
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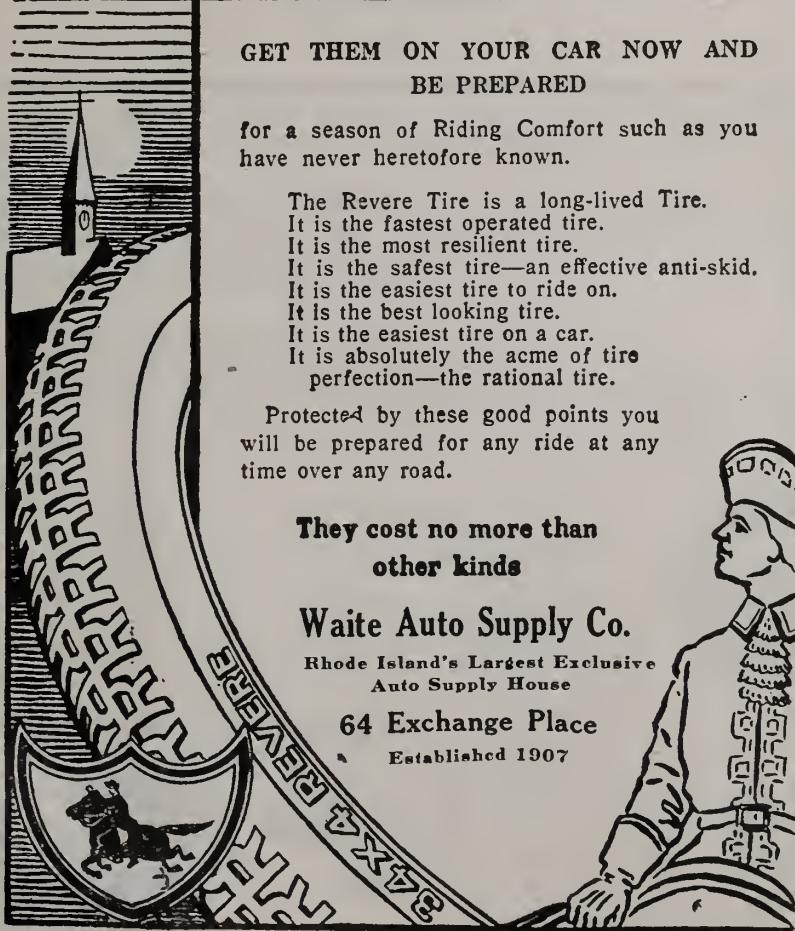
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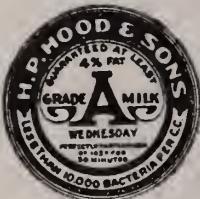
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